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NORTH CAROLINA CHILD AND ADOLESCENT MORTALITY

by

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ABSTRACT

During the last decade in North Carolina, considerable progress has been made in the reduction of both white and nonwhite childhood mortality, especially infant mortality. From 1974-78 to 1983-87, childhood death rates declined substantially, 30 percent for infants and 25 percent for ages one through 19. Both whites and nonwhites experienced improvements in mortality during this period, but the nonwhite mortality rate continues to be at least 1.6 times the white rate for children through age nine.

Comparing North Carolina's 1983-87 death rates to the national rates for 1983-86 reveals that North Carolina's infant mortality rate was 14 percent higher; the infant death rate for motor-vehicle injuries was 59 percent higher. Though the state mortality rate for all causes for 1-19-year-olds was only 5.4 percent higher than the national rate, the rates differed greatly on a cause-specific basis. The motor-vehicle injury death rate was 26 percent higher than the national rate, while North Carolina rates for homicide and cancer were each 23 percent lower.

Aid to Families with Dependent Children (AFDC) records were matched to death records, allowing cause-specific mortality comparisons among poor and non-poor youth. Results show that AFDC children aged 28 days to 17 years experienced much higher mortality than their non-AFDC counterparts. This generally seems truer for whites than nonwhites. Contrary to the race differentials in mortality evident in the general population, AFDC white mortality compared to AFDC nonwhite mortality reveals no disparity between the races.

Finally, this report examines some of the risk factors and intervention efforts associated with leading causes of child and adolescent mortality. This information should be helpful to those responsible for the design and implementation of child health programs in North Carolina.

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INTRODUCTION

Improving the health status of children through the prevention of disease, disability, and death has long been an objective of public health policy at national, state, and local levels. This study is part of an ongoing effort by the Center for Health and Environmental Statistics to report patterns in childhood and adolescent mortality, thereby identifying areas in need of prevention efforts (1,2).

In the last few decades, predominant causes of death among the young, such as infectious disease and cancer, have been replaced by injury and violence. In fact, childhood and adolescent mortality is distinguished from mortality of older persons by a greater proportion of deaths due to injuries. Fifty-six percent of all 1983-87 deaths to North Carolinians ages one to nineteen were the result of unintentional injury; an additional 11.2 percent of all deaths of young people were attributed to the intentional acts of suicide and homicide.

A special focus of this study is the mortality of poor children, specifically, those whose families receive AFDC (Aid to Families with Dependent Children). The mortality rate for AFDC youth is nearly three times the death rate of children of higher economic status. Understanding the nature and cause of this disparity is a prerequisite to designing and implementing maternal and child health programs needed to ameliorate this differential.

METHODS

In calculating the percent changes in childhood mortality in North Carolina from 1974-78 to 1983-87, deaths were tabulated according to the decedents' age, race, sex, and cause of death. Population estimates for 1974-78 and 1983-87 were provided by the North Carolina Office of State Budget and Management. Codes from the Eighth Revision of the *International Classification of Diseases* (ICD) were used for the classification of 1974-78 causes of death, and codes from the Ninth Revision of the *International Classification of Diseases* were used for the classification of 1983-87 causes of death. Causes of death and the corresponding ICD codes are listed in Appendix I.

Each revision of the ICD produces some break in the comparability of cause-of-death statistics. Measures of this discontinuity, ratios of comparability, were constructed by Klebba, *et al.* (3). The two revisions compare very well, with ratios of 1.00 $\pm$ 0.01 for all causes of death examined in this report with only a few exceptions. In the computation of percent changes in death rates between 1974-78 and 1983-87 (Table 9), 1974-78 infant death rates for perinatal conditions for each race/sex category were adjusted by multiplying the rates by the comparability ratio 0.8492. Likewise, the infant death rates for pneumonia/influenza were adjusted using the 0.7471 comparability ratio, and the 1974-78 death rates for pneumonia/influenza for ages 1-19 were adjusted to reflect the 0.9264 comparability ratio.

The statistical significance levels of the percent changes over time in Tables 9 and 10 are derived from the natural log of the ratio of the two rates as described in Appendix II. Ratios not significantly different from 1.0 at $p < 0.05$ are not reported. Percent changes which are incalculable due to base rates of zero also are not reported.

National mortality rates for 1983-87, which would have been compared to state 1983-87 mortality rates, were not available at the time of this writing. Because of this, the 1983-86 national mortality rates were selected for comparison to the state rates. National rates for the period 1983-86 are not published as such and had to be computed.

Except for heart disease, national deaths are tabulated in the same ICD groupings shown in Appendix I. These figures were taken from Tables 1-8, 1-25, and 2-16 of the 1983-1986 publications of the *Vital Statistics of the United States*, Volume II - Mortality, Part A (4-7). Then, the figures were divided by 1983-86 national childhood population figures derived from the United States Bureau of the Census March 1988 estimates of 1980-1987 U.S. population (6). Because total heart disease deaths were not tabulated, U.S. 1983-86 heart disease rates were estimated by: 1) multiplying each annual rate by its corresponding population to yield annual deaths; 2) summing the annual deaths for the 1983-86 period; and 3) dividing the 1983-86 heart disease deaths by the 1983-86 population. The computation and reporting in Tables 12 and 14 of statistically significant percent differences between the state and national rates are done in the same manner as are the statistically significant percent differences between the 1974-78 and 1983-87 state rates, as previously discussed.

Cause-specific North Carolina childhood mortality is compared by race and sex in Tables 15 and 16 via race and sex ratios. The statistical significance of these ratios is also derived from the natural log of the ratio of the two rates as described in Appendix II. Ratios are reported if they were found to be

significantly different from 1.0 at $p < 0.05$. As previously discussed, non-significant and incalculable ratios are not reported.

The last section of this report examines the mortality of poor versus nonpoor youth. Lacking a more suitable indicator of poverty, participation in the Aid to Families with Dependent Children Program (AFDC) (including Medicaid, based on AFDC eligibility) is used as a surrogate because a registry of those children is available at the state level. AFDC eligibility requirements for children are outlined in Appendix III. This AFDC registry was matched to death certificates by Paula Kenney of the Division of Social Services of the North Carolina Department of Human Resources. Death certificates for 3,679 children aged 28 days through 17 years who died from July 1, 1985, to December 31, 1988, were matched with AFDC and AFDC-Medicaid files for the same period. Decedents under 28 days of age were not included because the short time between birth and death may have precluded the enrollment in AFDC of some children. Five hundred and sixteen of the 3,679 decedents were, at some time during this period, recipients of AFDC.

The AFDC population by race and age group for July 1, 1985, through December 31, 1988, was obtained by an unduplicated count of AFDC recipients age 17 or younger for this period. AFDC records prior to July 1, 1985, were unavailable. These figures were subtracted from the North Carolina population by race and age group for the same period to obtain figures for the non-AFDC population. The AFDC and non-AFDC populations for July 1, 1985, through December 31, 1988, can be found in Appendix IV.

Throughout this report, death rates are defined as deaths per 100,000 population. Infants are defined as persons less than one year of age. Also, "accident" has a rather capricious connotation implying lack of cause. The Injury Control Branch's stance is that all injuries have causes and are therefore preventable. In the text of this report, "unintentional injury" replaces the word "accident." For ease in reporting and readability of the narrative, and because motor-vehicle injury is reported as a leading cause of death, the "unintentional injury" tables exclude motor-vehicle injury. Note also that the motor-vehicle injury category excludes suicides and homicides by motor vehicle.

RESULTS

Leading Causes of Childhood and Adolescent Mortality, 1983-87

For the period 1974-78, Tables 1 and 2 provide numbers and rates, respectively, for leading causes of death. Tables 3 and 4 provide numbers and rates, respectively, for leading causes of death for the period 1983-87. Tables 5-8 provide selected comparable statistics for unintentional injuries.

During 1983-87, motor-vehicle injury was the leading cause of death in each age group except infants. Teenagers 15 through 19 years of age had a notably high death rate due to motor-vehicle injuries (40.7 per 100,000 population). For infants, the leading causes of death were perinatal conditions, congenital anomalies, and SIDS (sudden infant death syndrome). The infant motor-vehicle death rate was also surpassed by the infant death rates for heart disease and pneumonia/influenza. The leading cause of injury deaths among infants was homicide (7.0), surpassing the infant death rates for both accidental mechanical suffocation (6.3) and inhalation/ingestion causing obstruction (5.4). The infant homicide rate even exceeded the 15-19-year-old homicide rate.

The second and subsequent leading causes of childhood and adolescent death change with each age group. For 1-4-year-olds, the second leading cause of death was congenital anomalies (6.6) followed by fires (5.9) and drowning (3.6). For 5-9-year-olds, the second leading cause was cancer (3.0) followed by fires (2.0). For 10-14-year-olds, death rates for drowning (2.4) and cancer (2.4) were the second leading causes of death. For 15-19-year-olds, the leading cause of death was motor-vehicle injuries (40.7) followed by suicide (8.6) and homicide (6.0). Drowning was the fourth leading cause of death among 15-19-year-olds (4.3).

Percent Changes in Death Rates from 1974-78 to 1983-87

Leading Causes

Table 9 shows statistically significant percent changes in death rates for leading causes from 1974-78 to 1983-87. Bias in percent changes due to the 1979 revision of the International Classification of Disease codes is considerable for pneumonia/influenza and perinatal conditions. Thus, the

percent changes for these causes have been adjusted according to comparability ratios based on dual coding of death certificates by the Eighth and Ninth Revisions of the International Classification of Diseases (3). These ratios are specified in the footnotes of Table 9.

In the last few decades, much progress has been made in the reduction of childhood death rates, especially infant mortality. Even in the last decade, childhood death rates declined substantially, 30 percent for infants and 25 percent for ages one through 19.

The more notable decreases in cause-specific infant death rates involved pneumonia/influenza (59.5%) and unintentional injuries (41.9%) with the unintentional injury death rate falling by one-half for white infants compared to one-third for nonwhite infants. The infant death rate for perinatal conditions fell 21.4 percent, the white rate declining by 29.3 percent and the nonwhite rate declining by 10.8 percent. The SIDS rate fell 14.7 percent for all infants and 33.6 percent for nonwhites. The congenital anomalies death rate fell 9.5 percent, attributable primarily to reduction in the white female rate.

The pneumonia and influenza death rate for ages 1-19 also fell substantially (59.0 %), the white rate falling 64.2 percent and the nonwhite rate falling 53.1 percent. Notable declines in other rates for ages 1-19 were: cancer (37.3%), congenital anomalies (30.9%), motor-vehicle injury (21.3%), and homicide (17.3%). Nonwhites experienced greater improvements in cancer and motor-vehicle injury mortality than whites; and though the white congenital anomaly rate declined 35.9 percent, no change was detected in the nonwhite congenital anomaly rate. Although the white homicide rate fell 28.2 percent, there was virtually no change in the nonwhite homicide rate. All of the mortality rates for leading causes fell substantially, with the exception of the suicide rate, which **increased** 22.6 percent among whites. White males had the largest increase (36.7%).

Unintentional Injury

For the period 1974-78, Tables 5 and 6 provide numbers and rates, respectively, for deaths attributed to unintentional injury (excluding motor-vehicle injury) among North Carolina residents under age 20. Tables 7 and 8 provide corresponding numbers and rates for 1983-87. Table 10 shows statistically significant percent changes in these death rates from 1974-78 to 1983-87.

The unintentional injury death rate (excluding motor-vehicle injury) decreased in nearly every age/race category except that of white 1-4-year-olds and nonwhite 5-9-year-olds where changes in rates were not apparent. The death rate for these injuries fell 43.9 percent for infants, more than in any other age group. However, every age group experienced at least a 20 percent decline in this rate.

The unintentional injury rate for all youth under age 20 fell 34.7 percent. On a cause-specific basis, notable rate decreases were: poisoning (45.6%), inhalation/ingestion causing obstruction (44.9%), firearms (44.4%), and drowning (39.7%). Even more marked decreases are noted in certain age groups: firearms at ages 1-4 (78.2%) and ages 5-9 (66.8%), nonwhite infant deaths due to fires (78.1%), and all infant fire deaths (68.1%). The death rate for falls among 1-4-year-olds decreased 66.1 percent, and the death rate for poisoning decreased 76.5 percent in this age group.

Comparisons of North Carolina and United States Rates

Leading Causes

Death rates for North Carolina youth for the years 1983-87 are compared to the 1983-86 national death rates. National childhood death rates for leading causes are in Table 11. The statistically significant percent differences between the North Carolina and United States rates for leading causes of childhood death are in Table 12.

For the time periods compared, North Carolina's infant death rate was 14.2 percent higher than the national rate. No other single age group experienced a total death rate significantly different from the corresponding national rate. On a cause-specific basis, the infant death rate for motor-vehicle injuries was 59.4 percent higher in North Carolina than in the nation as a whole, primarily attributable to nonwhite infants who experienced a rate 85.8 percent higher than the national nonwhite infant rate. The following North Carolina cause-specific infant death rates were also higher than the national rates (see Table 12): perinatal conditions (21.8%), unintentional injury (21.9%), SIDS (11.0%), and congenital anomalies (6.7%). Also of note, the white infant death rate for pneumonia and influenza was 41.9 percent lower in North Carolina than nationally.

The North Carolina death rate for all ages 1-19 was 5.4 percent higher than the national rate. The cause-specific state rates for ages 1-19 compare to the national rates as follows: motor-vehicle injuries, 25.9 percent higher and cancer, 23.0 percent lower. The state homicide rate for all resident youth was 22.9 percent lower than the corresponding national rate, 28.2 percent lower for whites and 41.4 percent lower for nonwhites.

Among ages 15-19, the homicide figures are more disparate. The state rate was 31.9 percent lower than the corresponding national rate, with the nonwhite homicide rate being 50.8 percent lower than the national rate.

North Carolina children in every age group are more at risk for death due to motor-vehicle injury. They are less at risk for death from cancer however, at least at ages 1-4, 10-14, and 15-19.

Unintentional Injury

National unintentional injury mortality rates are reported in Table 13. Statistically significant percent differences between national and North Carolina rates for death resulting from unintentional non-motor-vehicle injuries comprise Table 14.

For all ages under 20, the North Carolina death rate for all unintentional injuries was 8.9 percent higher than the national rate. Differences between the state and national rates were particularly significant for nonwhites. The state rate for all residents was 18.1 percent higher at ages 10-14 and 12.6 percent higher at ages 15-19. The state rate was no higher than the national rate for infants, 1-4-year-olds, and 5-9-year-olds.

For ages 1-4 the North Carolina death rate for fires was 34.7 percent higher than nationally, primarily attributable to a nonwhite rate 29.5 percent above the national rate; there was no significant difference between the state and national rates for whites in this age group. The North Carolina death rate for drowning was 42.1 percent higher at ages 10-14 and 36.9 percent higher at ages 15-19 than the corresponding national rates.

Variations in North Carolina Rates by Race and Gender

Statistically significant race and gender ratios for leading causes and for deaths resulting from selected unintentional injuries comprise Tables 15 and 16, respectively.

Although there have been substantial decreases in childhood mortality over the last decade, there remain appreciable differences by race and gender. This section analyzes race and gender differentials in childhood mortality in terms of relative risks, that is, mortality rate ratios for race (nonwhite to white) and gender (male to female).

Nonwhites to Whites

While the race ratio for all causes of death at ages 1-19 is 1.1, the race groups die disproportionately from specific causes of death in certain age groups. For infants, the race ratio for all causes of death is 1.8. For 1-4- and 5-9-year-olds, nonwhite mortality rates are respectively 1.7 and 1.8 times the white mortality rates. However, at ages 15-19, the race ratio is 0.8, reflecting higher mortality among whites in this age group. At ages 10-14, there is virtually no difference between the nonwhite and white rates.

Rates for leading causes of infant death are generally much higher for nonwhites than for whites. Nonwhite infant death rates for perinatal conditions, heart disease, and homicide are at least twice those for whites. The race ratio for SIDS is 1.8, and nonwhite infants are at least four times as likely as their white counterparts to suffer death from pneumonia/influenza.

In every age category, nonwhite children are more at risk for homicide than are white children. The homicide race ratio is 2.3 for infants, 3.8 for ages 1-4, 4.4 for ages 5-9, 2.3 for ages 10-14, and 3.3 for ages 15-19.

For suicide, whites are more at risk; the race ratios are 0.1 and 0.3 for ages 10-14 and 15-19, respectively.

Nonwhites die disproportionately from **unintentional injuries**. (Table 16). The race ratios for infants and for age groups 1-4 and 5-9 are all 2.0 or higher. At ages 10-14, this ratio drops to 1.8. For all ages under 20, the race ratio is 1.7.

Under age 5, nonwhites die disproportionately from mechanical suffocation, fires, falls, and death due to "inhalation or ingestion causing obstruction" (IICO). Note that nonwhite infants are 2.2 times as likely as whites to suffer death from mechanical suffocation and 4.4 times as likely as whites to suffer death from IICO. For 1-4-year-olds, the race ratios are: 11.7 for falls, 6.1 for IICO, and 4.0 for fire. Fire still disparately affects the races at ages 5-9 and 10-14, though not as greatly, yielding race ratios of 3.1

and 3.2, respectively. Race ratios for drowning are 4.2 at ages 10-14 and 2.5 at ages 15-19.

Death rates for **motor-vehicle injuries** are greater among nonwhites than whites at ages less than 1, 1-4, and 5-9. The race ratios for these age groups are nearly significant at 1.9, 1.4, and 1.3, respectively (with corresponding p-values of .052, .06, and 0.07). At ages 10-14 and 15-19, whites experience higher mortality; the race ratios are 0.7 and 0.5, respectively.

Male to Female

Young males of all ages experience higher death rates for the **leading causes** than do females. The gender ratio continually increases, from 1.2 for infants to 2.6 at ages 15-19. Males are 1.4 times as likely as females to suffer death from SIDS. For 1-4-year-olds, males are 2.7 times as likely to die from pneumonia/influenza as are females. The suicide gender ratio is 2.6 for 10-14-year-olds and 4.8 for 15-19-year-olds. Also at ages 15-19, males are 2.4 times as likely to die from homicide and 1.8 times as likely to die from heart disease as are females.

For deaths resulting from **unintentional injuries**, the mortality rates after infancy are significantly higher for males; the gender ratio increases from 1.5 at ages 1-4 to 6.2 at ages 15-19. For all ages under 20, the gender ratio for these deaths is 2.7.

For ages 5-9, males are 2.7 times as likely to suffer death from drowning as females, and 2.2 times as likely to die from fire. The drowning gender ratio increases to 6.0 at ages 10-14 and to 17.0 at ages 15-19. Death from firearms also occurs disparately; males are 12.7 and 17.0 times as likely to suffer death from firearms as females at ages 10-14 and 15-19, respectively.

Death from **motor-vehicle injuries** likewise occurs disproportionately between the sexes, even at younger ages. While the gender ratio for infants does not differ enough from 1.0 to be statistically significant, a difference is detected in all other age groups, starting with a gender ratio of 1.4 for 1-4-year-olds and increasing to 2.5 for 15-19-year-olds.

AFDC Children versus Others

This portion of the study attempts to assess, on a race-specific basis, the association between poverty and childhood mortality. Lacking a more suitable indicator of poverty, participation in the Aid to Families with Dependent Children Program is used as a surrogate.

For this study, 3,679 death records for children aged 28 days through 17 years who died from July 1, 1985, to December 31, 1988, were matched with AFDC and AFDC-Medicaid files to determine AFDC status at time of death. The AFDC unduplicated case load during this period (318,792 persons aged 17 or less) was then used to determine AFDC death rates specific for age group, race, and underlying cause of death. Deaths under 28 days were excluded because the short time between birth and death may have precluded the enrollment in AFDC of some eligible children.

Table 17 displays the number of deaths to AFDC and non-AFDC children; Table 18 provides the corresponding death rates. Age-specific numbers of deaths and rates by cause are not listed due to the small AFDC enrollment and number of deaths, especially at ages 5-9, 10-14, and 15-17. The ratios of AFDC to non-AFDC death rates of Table 19 reveal much higher mortality among AFDC children than among the non-AFDC population aged 28 days to 17 years. These findings are similar to those of an earlier study (2). That AFDC children have higher mortality rates seems to be more true for whites than nonwhites, except at ages 1-4 where the race-specific ratios are identical. Only at ages 15-17 are the AFDC and non-AFDC death rates not significantly different. Whether this is attributable to a true similarity in the rates or the small number of 15-17-year-old AFDC deaths is not ascertainable.

For all childhood age groups combined, the cause-specific data are alarming. AFDC recipients are 6.2 times as likely as non-recipients to die from fire. Mortality from homicide and from pneumonia and influenza are 4.8 and 4.3 times higher, respectively, for AFDC recipients than for non-recipients. Heart disease claims the lives of AFDC children 3.6 times as often as it does those of non-AFDC children. AFDC recipients are 3.5 times as likely to die from congenital anomalies, 2.3 times as likely to die from drowning, 2.1 times as likely to suffer death from unintentional injuries, 1.8 times as likely to die from cancer, and 1.4 times as likely to suffer a motor-vehicle fatality.

Controlling for poverty, that is, comparing the mortality rates of AFDC nonwhites and AFDC whites (see Table 20), the marked disparity between the races is not present as is the case in the general population. Only at ages 1-4 do nonwhite AFDC recipients experience higher mortality than white AFDC recipients, and then at a ratio of only 1.5. The AFDC nonwhite to AFDC white mortality rate ratios for the other age groups are not significantly different from 1.0.

DISCUSSION

Over the last decade, substantial decreases in overall childhood mortality have been observed in North Carolina. Still, there remain appreciable age, race, and sex differences in the mortality decline and in the current status of childhood and adolescent mortality.

Age, Race, and Sex Differentials in Mortality Decline

Declines in mortality rates from 1974-78 to 1983-87 averaged 28 percent among children and adolescents, with 5-to-9-year-olds experiencing the greatest improvement.

- Race and gender differences in mortality declines were minimal for children ages 10-14 and 15-19. This contrasts with a National Center for Health Statistics study in which differences in mortality decline between 1950 and 1985 were notable for ages 10-14 and 15-19 and minimal for ages 1-4 and 5-9 (9).
- For children ages 1-4, nonwhites experienced the greater decline (33 versus 24 percent, but for children ages 5-9, whites experienced the greater decline (40 versus 22 percent).
- Gender differences in mortality decreases are observed only for ages 1-4 and 5-9. Females experienced greater decreases than males in both age groups.

Childhood mortality studies from other states have not examined mortality rates over time, thus precluding comparisons to changes in the North Carolina rates (10-14).

Comparison to National Rates

The North Carolina infant mortality rate is unconscionably high. Notwithstanding a 30 percent decrease over the last decade, North Carolina's provisional infant mortality rate was the highest in the nation in 1988. Moreover, the United States infant mortality rate was higher than that of 20 other industrialized nations and Hong Kong* (15,16). In the period 1983-87, the North Carolina infant mortality rate was 12.3 deaths per 1,000 live births, 14.2 percent higher than the 1983-86 United States rate. No other single age group experienced a death rate significantly different from the corresponding national rate.

For all children ages 1-19, the 1983-87 North Carolina mortality rate was only 5.4 percent higher than the 1983-86 national rate. However, on a cause-specific basis, North Carolina differed greatly from the nation. While the state motor-vehicle injury rate was 26 percent higher than the national rate, state rates for cancer and homicide were each 23 percent lower.

Vast Proportion of Childhood Deaths Caused by Injury

Childhood mortality is distinguished from mortality of other age groups by the vast proportion of deaths caused by injury.

- Fifty-six percent of all North Carolina deaths to 1-to-19-year-olds are attributable to unintentional injury with an additional 11 percent resulting from homicide or suicide.
- Among youth ages 10-14 and 15-19, injuries are responsible for 65 percent and 79 percent respectively, of all deaths.
- Thirty-seven percent of deaths among children 1 to 19 years old result from motor-vehicle injuries, the leading cause of death in this age group.

Race and Gender Differentials in Mortality Rates

Race and gender differentials in mortality rates are observed in nearly every age group.

- Nonwhites experienced higher mortality than whites during infancy and at ages 1-4 and 5-9. External causes of death (unintentional injury, homicide, and suicide) accounted for 57 to 73 percent of the race differential in total mortality for children ages 1-4 and 5-9, respectively.
- No race differential is observed at ages 10-14.

*The United States rate was higher than that of 20 other industrialized nations and Hong Kong in 1986, in 1987, and in 1988, the most recent year available.

- White mortality was slightly higher than nonwhite at ages 15-19, the only child and adolescent age group in which whites experienced higher mortality. In this age group, the white motor-vehicle injury rate was twice that of nonwhites.

The nonwhite homicide rate for 15-to-19-year-olds was 3.3 times that for whites.

Conversely, the white motor-vehicle death rate was twice that of nonwhites. A possible explanation for this difference is that fewer black teenagers are exposed to the risk of being a motor-vehicle occupant. Data from the 1980 census on North Carolina occupied housing units showed that 24 percent of nonwhites compared with 7 percent of whites had no motor vehicle (17). "If it were possible to adjust the motor-vehicle death rates for exposure to risk (that is, miles [travelled] it is possible that the rates for [nonwhite adolescents] would be higher than those for white [adolescents]" (18).

Males have higher death rates than females in every age group. External causes of death accounted for the following percentages of gender differences in total death rates:

Age Group	Percentage
Ages 1-4	53
Ages 5-9	94
Ages 10-14	91
Ages 15-19	92

Natural Causes of Death

Natural causes of death account for 33 percent of deaths to children ages 1-19, with proportions ranging from 54 percent among 1-to-4-year-olds to 21 percent among 15-to-19-year-olds. The leading natural causes are cancer and congenital anomalies followed by heart disease.

Mortality and Socioeconomic Status

The relationship between socioeconomic status and health, long suspected, was first documented in this country in 1925 (19) and has since been widely recognized (20-28). ***The overall childhood mortality rate of AFDC recipients is nearly three times the rate of those children not receiving such aid.*** On a cause-specific basis, the disparity is even more extreme.

This study revealed that through age nine, nonwhite mortality rates are at least one-and-a-half times those of white children. Because socioeconomic status and race are related, racial differences in risk factors or medical care have been proposed as an explanation for the mortality gradient associated with socioeconomic status (29). However, socioeconomic gradients are also found within racial and ethnic groups (30,31), and, in some cases, socioeconomic position may actually account for what appear to be racial differences in health (26,32,33). These referenced findings are corroborated by this study; ***no differences between nonwhite and white age-specific mortality rates are observed when rates of poor nonwhite children are compared to rates of poor white children.***

The strong association between childhood mortality and socioeconomic position clearly indicates the existence of a social class differential in utilization of and access to health care services and facilities. "That is, the first to benefit from advances in medical technology and other health care improvements are those in the highest income classes; only gradually do the fruits of such progress filter down to the economically deprived groups in the society. Such a situation reflects what can only be characterized as an elitist approach to the delivery of health care . . . . In a nation where we like to think that adequate health care is a basic right for all citizens, and not just an expensive privilege for those who can afford it, such a situation presents a major challenge" (28), not only to maternal and child health professionals, but to executive branches and legislative bodies at every governmental level.

RISK FACTORS AND INTERVENTION EFFORTS

Since the vast majority of childhood and adolescent deaths are preventable, this study concludes with a summary of some current knowledge of the main causes and risk factors associated with North Carolina childhood and adolescent deaths. The following discussion is a departure from the data analysis of the previous section and points to the gap between what is known about controlling childhood and adolescent mortality and what is being implemented in North Carolina.

Interventions in Infant Mortality

The single most important factor associated with infant mortality, especially deaths from perinatal conditions, is low birthweight (under 2500 grams). In 1983-87, fifty percent of all North Carolina infant deaths resulted from perinatal conditions, and 90 percent of these infants weighed less than 2500 grams at birth. Little progress has been made in North Carolina in the last decade in reducing the percentage of infants who are born too small. From 1974-78 to 1983-87, the low birthweight rate decreased only 4.8 percent. Since whites and nonwhites experienced nearly identical reductions, the percentage of 1983-87 nonwhite infants who were low-weight (11.9) remains twice that of whites (6.0).

Racial disparities in utilization of prenatal care are just as evident. During 1983-87, seventy-eight percent of white mothers received adequate prenatal care, but only 55 percent of nonwhite mothers did so*. Though this is an improvement over the 1975-78 figures of 72 versus 42 percent, much remains to be done to bridge this gap.

It has been shown that much of the decline in neonatal mortality in North Carolina over the last decade has been due to better survival of low-birthweight babies (35). United States Assistant Secretary for Health, James O. Mason, states that "reductions in infant mortality achieved in recent years have been primarily because of sophisticated lifesaving technology in neonatal intensive care units." He argues that "we have . . . just about reached the limits of what technology can do to save the lives of infants who are born too small and too soon (15)." We have not, however, reached the limits of what we can do to combat the factors that result in low birthweight. We do know that early access to prenatal care is crucial to increasing birthweight, and for pregnant women in poverty, support services such as nutrition, education, counseling, and case management, in addition to obstetrical care, have been shown to be very important (36).

Interventions in Child and Adolescent Mortality

The word injury is derived from the Latin word for 'not right' — an appropriate term for the leading cause of death among children and adolescents, especially since the vast majority of these deaths can be prevented. "'Not right' also describes the failure, until recently, of most health professionals and their institutions to give appropriate attention to this problem" (37). Reisinger and Bires have reported that the average pediatrician devotes less than 10 seconds to anticipatory guidance on prevention of injuries (38). C. Everett Koop, the recently retired Surgeon General of the United States and Chair of the Safe Kids Campaign, noted, "If a disease were killing our children in the proportions that accidents are, people would be outraged and demand that this killer be stopped" (39).

In recent years, much research has been devoted to the causes of injury, and intervention strategies are being designed to prevent them.

Alcohol as a Risk Factor

Alcohol is a contributing factor in nearly every cause of childhood and adolescent injury mortality. Alcohol use by 15-to-19-year-olds contributes to their own motor-vehicle fatalities, drownings, homicides, and suicides, but childhood mortality for this age group, and even more so for younger age groups, results from the use of alcohol by others as well.

According to records from the North Carolina Medical Examiner's Office covering the period 1983-87, thirty percent of 15-to-19-year-old motor-vehicle injury decedents were under the influence of alcohol at their time of death (40). While even moderate amounts of alcohol can impair judgement

*These figures are derived from the Kessner Index, an algorithm based on three factors: the trimester in which the first prenatal visit occurred, the number of prenatal visits, and the number of weeks gestation at the time of delivery (34).

and the elderly are at greatly increased risk of crash involvement after consuming moderate amounts of alcohol (41,42). The percentage of 15-to-19-year-old North Carolina residents under the influence of alcohol at the time of their death is also high for drowning (27%), suicide (20%), homicide (40%), and fire (40%) (40).

Changing human behavior with the goal of decreased alcohol consumption is difficult, especially among adolescents. Nancy Reagan's "Just Say No!" campaign addressed only illicit drug use. But, considering the impact of alcohol on adolescent mortality and that alcohol consumption among adolescents is much more prevalent than illicit drug use (43), any behavior-modification campaign directed at children that does not address the danger of alcohol is myopic.

One study suggests that adolescent alcohol consumption could be decreased through increased alcohol taxes; alcohol sales and consumption appear to be elastic[1] (44), and there is some evidence that teenagers are most sensitive to price (45).

As alluded to previously, much childhood and adolescent mortality may be the result of alcohol abuse by older persons. In 1985 North Carolina housefire deaths, fifty-six percent of the decedents aged 15 and older who were tested for blood alcohol had a level of 0.10 percent or greater[2] (46). Though children and adolescents died in these fires, their number is unknown as data on blood alcohol content of adult decedents of the same fire are not reported by the medical examiner on child or adolescent decedents' records. Childhood and adolescent motor-vehicle fatalities also result from alcohol abuse by older persons. A study by the North Carolina Highway Safety Research Center shows that, of motor-vehicle fatalities to children aged 14 or younger, 15.4 percent were alcohol-related (47).

Motor-Vehicle Injuries

Several strategies to prevent adolescent motor-vehicle injuries have been proposed and in some states are already in place. Twelve states currently have curfew laws that prohibit 16-year-olds from driving late at night and early in the morning (usually midnight to 5 a.m.). According to a study of four of the states, crashes involving 16-year-olds were reduced by 25 to 69 percent (48). "With a full 50 percent of fatal crashes among 16-to-19-year-olds occurring between 9 p.m. and 6 a.m. [nationally], this measure has promise" (49).

The combined use of lap and shoulder belts has been shown to reduce the likelihood of death or serious injury for all occupants by approximately 50 percent (50). While the North Carolina Child Passenger Protection Law[3] no doubt contributed to the statewide 35.3 percent decrease in 1-to-4-year-old motor-vehicle fatalities in the last decade, adolescents are far less likely to use seat belts than are other age groups, even when use is mandated by law (51,52).

Preventive strategies which require action on the part of the child or parent can be quite troublesome, requiring an initial purchase or rental and several actions each time the child needs protection. Passive protection strategies are preferable for children as well as adolescents, who are even less likely to use active restraints. The recently enacted Federal Motor Vehicle Safety Standard Number 208, promulgated by the National Highway Safety Agency of the Department of Transportation, requires that all new passenger cars sold in the United States be outfitted with passive restraints beginning in 1990, but this regulation applies only to the driver and passenger sides of the front seat of the automobile, not to the back seat where many children and adolescents are passengers. Also, this regulation applies only to new cars. Persons of lower education and socioeconomic strata, who are less likely to buckle seat belts or purchase new cars and who would benefit most from passive restraints, will be the last to benefit from these federal measures.

[1]When prices increase to a certain point, consumption decreases correspondingly.

[2]A person is considered legally intoxicated in North Carolina if his or her blood alcohol level is 0.10 percent or greater.

[3]The initial North Carolina Child Passenger Protection Law went into effect July 1, 1982 but required only that children less than two being driven by their parents be restrained. In 1985, the law was expanded and strengthened to require all children less than six to be restrained regardless of who is driving. The North Carolina Seat Belt Law went into effect October 1, 1985 and requires that persons age six and older be restrained when occupying the front seat of passenger vehicles.

Suicide

Over the last decade in North Carolina, impressive decreases have been observed in the rates of nearly every leading cause of childhood and adolescent death; suicide is the exception. Suicide rates have even eclipsed those of homicide and cancer. Suicide is now second only to motor-vehicle injuries in causing fatalities among 10-19-year-olds. This data is even more unsettling in light of reports which estimate that suicides are underreported by as much as 50 percent (53,54). Some reasons for this relatively low sensitivity may be that coroners and medical examiners use different definitions of suicide, require different evidence, and may yield to family or community pressures to avoid the stigma of suicide (55). In North Carolina, however, apparent suicides must be investigated and certified by the State Medical Examiner System, which has come to be regarded as one of the most accurate and complete medical examiner systems in the country. Thus the sensitivity of suicide reporting in North Carolina may be close to 100 percent. But, also unsettling are reports which estimate that suicide attempts are up to eight times more common than completed suicides (20,56-58).

Comparable to national figures (55), young North Carolina whites are nearly four times as likely to complete suicides as nonwhites, and boys are over four times as likely to complete suicides as girls. Across all age groups, females attempt suicide up to three times more often than males (56,59).

Most of these disparities are poorly understood. The gender differential, according to Sudak *et al.* (60), is generally explained along cultural and gender-role-assignment lines. They hold that since women are allowed more latitude for emotional expression, they are apt to select readily available means when they attempt suicide. Such available agents are likely to be of low lethality. This contrasts with males, on whom our society places a higher premium for emotional control and who, therefore, are more likely to brood for considerable periods of time before giving in to suicidal feelings. Thus, males have sufficient time to gain access to suicidal methods of higher lethality (60). In fact, in 1983-87, seventy-seven percent of North Carolina adolescent male suicide decedents took their own lives with firearms versus 58 percent of adolescent female decedents (40). Females tend to pick methods that are purportedly less painful or cosmetically disfiguring, eschewing guns and selecting less lethal methods such as barbituates, carbon monoxide, alcohol, or other poisons (60). Twenty-five percent of North Carolina female suicide decedents selected such methods versus nine percent of male decedents (40).

The racial disparity in suicide rates is even more perplexing. While authors have put forth explanatory theories, the evidence is inconclusive or has been refuted by others (61-72).

The numerous factors associated with suicide are far-reaching and are deeply rooted in the problems of society, family, and the biological makeup of the individual. Previous suicide attempts, family history of suicide, physical or sexual abuse, recent parental loss, and history of depression are all recognized factors associated with adolescent suicide. Social isolation, homelessness, drug and alcohol abuse, and "contagion" from other suicides may also contribute to suicide. Identifiable behaviors associated with suicide may include talk or preoccupation with death or preparing for death by giving away personal belongings. (20)

Seventy-three percent of North Carolina adolescent suicides during 1983-87 were committed with firearms (40). In rural North Carolina, seventy-five percent of teenagers reported having a gun of some type in their homes; fifty-five percent of teenage males reported owning their own weapons (73). Given these figures, limiting the availability and use of firearms in North Carolina would seem an appropriate measure in the reduction of adolescent suicide, especially since the literature suggests that when a common and culturally acceptable means of suicide becomes unavailable, many potential victims will not choose an alternative method (74).

Twenty percent of North Carolina adolescent suicide decedents were under the influence of alcohol at the time of their deaths during 1983-87 (40). Thus, reducing adolescent alcohol consumption may also curb suicide.

School-based intervention programs are becoming increasingly common, primarily because schools offer a good opportunity for reaching the largest number of young people. As reported by Amler (20), Rosenberg *et al.* suggest that school-based programs focusing on increasing affective awareness could decrease suicides by 20 percent. He states that "the inability to recognize and communicate feelings or affects may play an important part in the etiology of suicide" and recommends that "parent education, teacher training, and school curricula . . . place greater emphasis on the recognition and expression

of feelings." Other school-based programs are designed to include: 1) the instruction of teachers in both early identification/screening and crisis intervention/management and 2) the institution of programs immediately following the suicide of a young person in the community (75).

Practical intervention might also include targeting high-risk groups such as gay and lesbian youth. Though these young people are at extremely high risk for suicide, they have been virtually ignored. Little if any effort has been made to reach out and shatter the isolation that they so keenly experience. Gay and lesbian youth are reported to be two to three times more likely to attempt suicide than are other young people (75). Six separate studies have consistently shown that 18 to 35 percent of gay youth had made suicide attempts (76-81). In the U.S. Department of Health and Human Services' *Report of the Secretary's Task Force on Youth Suicide*, it is reported that lesbians and gays may comprise up to 30 percent of completed adolescent suicides annually (75). Gay youth face a hostile and condemning environment, verbal and physical abuse, and rejection and isolation from their families, peers, and church. An estimated 25 percent of young gay males are forced to leave home because of conflicts over their sexual orientation (77). The traumatic consequences of these external pressures make gay and lesbian youth more vulnerable than other youth to a variety of psychosocial problems and self-destructive behavior, including substance abuse, chronic depression, relationship conflicts, and school failure, each of which is a risk factor for suicide. Outreach to these individuals through heightened social awareness and programs specifically designed to accommodate their needs could conceivably prevent many suicides each year.

Homicide

Among children and adolescents, infants and 15-to-19-year-olds are most vulnerable to murder, nonwhite males being at greatest risk in both age groups. Poverty is a major risk factor. While the small number of AFDC-recipient homicides in the present study precluded a comparison of AFDC-recipient homicides by race, other studies have shown that when poverty is controlled for, the excess risk among blacks virtually disappears (82).

Forty percent of North Carolina's homicide victims ages 15-19 had measurable levels of alcohol at the time of their death during 1983-87 (40). It is difficult to determine, however, the extent to which alcohol is a risk factor for homicide as blood alcohol content is more likely to be measured for victims than for assailants.

Of all childhood and adolescent homicides in the 1983-87 study period, forty-five percent of those deaths were by firearms. Of those homicides for which the place of occurrence is known, fifty-four percent occurred in the decedent's own home. For 15-to-19-year-olds, forty-eight percent of homicides occurred at home, for 0-to-14-year-olds, 75 percent, and for infants alone, 86 percent (40). Given these figures and the fact that 75 percent of rural North Carolina teenagers reported having firearms in their homes (73), one can argue that gun control legislation would substantially decrease the number of childhood and adolescent domestic homicides.

Thirteen percent of the childhood and adolescent homicides were reported to be a result of child abuse or neglect, most of these to children less than age 5 (40).

Rosenberg *et al.* (20) observed that the following interventions have been identified by research as those most likely to reduce homicide, assault, and child abuse:

- Decrease the cultural acceptance of violence.
- Reduce racism.
- Forbid the corporal punishment of children.
- Regulate children's television programming. [Runyan notes that "the use of television programming to foster prosocial behaviors may reduce aggressive and violent behavior, as may limiting the amount of televised violence viewed by youths" (49).]
- Develop strategies to reduce firearm-associated injuries. Proposals include licensing provisions; prohibitions against buying, selling, or possessing guns; prohibitions against carrying guns (but not against owning them); mandatory penalties for the use of a gun in a felony; and mandatory prison sentences for carrying nonlicensed firearms.
- Coordinate health care with social services, increasing educational efforts aimed at reducing family stress and violence and improving the ways the health care system recognizes and manages cases of violence.
- Alter practices of criminal justice. Police should be trained to mediate disputes and refer troubled people to social service agencies. Police should treat family assaults as criminal behavior.

Firearms

Thirty-one percent of all unintentional firearm fatalities in North Carolina during 1983-87 were to children ages 0-14; the highest rates occurred among ages 10-14 and 15-19 with young white males being the predominant victims. These findings are corroborated by Morrow's study of 1976-80 North Carolina firearm fatalities (83). Also, from the Medical Examiner's files (40), 89 percent of childhood and adolescent unintentional firearm deaths were to males, seventy-two percent to white males. Only nine percent of unintentional firearm deaths to 10-to-19-year-olds were alcohol-related. Fifty-six percent of child and adolescent unintentional firearm deaths occurred in a private home or surroundings. Another 12 percent died on a farm. Twenty-seven percent were by rifle, 46 percent by handgun, and 27 percent by shotgun. (40)

Possible interventions for unintentional gun injuries are similar to those interventions for suicide and homicide. In addition to reducing the availability of guns through tougher licensing procedures, unintentional gun injuries could be prevented by: locking up guns and keeping them out of the reach of adolescents; fostering the use of single-shot guns, which must be reloaded between firings, to reduce the likelihood of accidental firings; requiring hunters to wear bulletproof vests and helmets; and, minimizing the possibility of inadvertent discharge by better gun design (thus making it more difficult for a child to fire a gun) (20).

Although firearms are often bought for protection from criminals, there is evidence that their presence increases the risk of a family shooting without appreciably reducing the risk of assault by a stranger (84).

Fire

Twenty-six percent of all 1985 North Carolina housefire deaths were caused by smoking and 33 percent were caused by heating; woodstoves contributed the largest percentage to heating-related fires (37 percent) (46). As previously mentioned, alcohol plays a leading role in death due to fire; of housefire decedents aged 15 and older who were tested for blood alcohol, 56 percent had a level of 0.10 percent or greater (46). Forty-two percent of 1983-87 housefire decedents aged 15-19 had detectable levels of ethanol in their blood (40). Alcohol use (coupled with cigarette smoking) contributes to the occurrence of fires and impairs the escape of intoxicated individuals.

Studies show that smoke detectors reduce the risk of death in housefires by 50 to 86 percent (85,86). Smoke detectors and fire extinguishers should be required in all rental units and new houses and should be installed and/or inspected in all resales. The Governor's Task Force on Injury Prevention and Control maintains that the number and severity of housefire injuries could be reduced by adhering to product safety standards for space heaters, woodstoves, and non-flammable upholstery and by promoting the development and sale of self-extinguishing cigarettes (84).

In the present study, AFDC recipients were found to suffer death from fire six times as often as nonpoor children. This finding is no doubt due to substandard housing among the poor and their inability to afford smoke detectors. Other researchers have reported a greater risk of house fires in rental property (87) and a lower rate of smoke detector installation by renters than by homeowners (88).

Drowning

During 1983-87, forty-five percent of North Carolina drowning victims aged 15-19 drowned in natural bodies of water. Forty-eight percent of decedents less than age 5 drowned in their own homes. Only 12 percent of childhood and adolescent drownings occurred in a public or private pool. Thirty-one percent of 15-to-19-year-old drownings were alcohol-related. (40)

The prevention of adolescent drowning is difficult. The covering or fencing of outdoor swimming pools has been a successful intervention effort, particularly for young children. However, since most North Carolina adolescent drownings occur in natural bodies of water, the usefulness of this approach is limited. Reducing the use of alcohol among adolescents may be an effective means of preventing drownings. Restricting the sale of alcoholic beverages in boating, pool, and beach areas and imposing stiffer penalties on drunken boat drivers would potentially reduce drownings in adults and teenagers. The Enforcement Division of the North Carolina Wildlife Resources Commission reports that, of all persons cited for operating a boat under the influence of alcohol and all decedents of boating accidents with a positive blood alcohol content, close to 50 percent had a record of at least one conviction of an alcohol-related traffic offense (89).

Teaching swimming and water safety to school-aged children may prove effective, though this may increase their risk by increasing their exposure.

Increasing the public's knowledge of cardiopulmonary resuscitation techniques is likely to greatly affect survival because drowning victims could be resuscitated immediately by a friend, family member, or passerby (90-92).

Poisoning by Solid/Liquid Substance

Poisoning deaths in North Carolina children ages 0-4 declined a dramatic 81 percent from the period 1974-78 to 1983-87, largely because of changes in the formulation and packaging of poisonous agents (93). No improvement was detected in the other age groups. The Governor's Task Force on Injury Prevention and Control (84) recommends that toll-free telephone numbers for poison control centers be made available throughout the state, printed on telephone stickers, and widely distributed. They also recommend that all households with children be provided poison control kits that include syrup of ipecac with clear instructions for its use and cabinet safety locks with reminders to store poisons safely. In one North Carolina county, the distribution of poison prevention kits resulted in a 25 percent decrease in emergency room visits and a 50 percent decrease in hospitalizations due to ingestion of toxic substances (84).

Suffocation

Deaths due to inhalation/ingestion causing obstruction or mechanical suffocation occur primarily in infants. The foods most commonly reported in choking incidents are pieces of hot dog, candies, nuts, and grapes (94,95). "Round or pliable objects, such as undersized infant pacifiers, small balls, and uninflated or underinflated balloons are the most commonly reported nonfood items" (20). Parents should be advised of the potential of common foods and objects to cause choking, and they should be taught the Heimlich maneuver (96).

CONCLUSION

This study indicates that the most salient factors contributing to child and adolescent mortality are adolescent alcohol use and poor utilization of health care services by persons of the lower socioeconomic stratum.

It is hoped that this review of North Carolina child and adolescent mortality data, risk factors, and intervention efforts will be of help in the development of programs and controls which address the reduction of child and adolescent deaths.

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TABLE 1
NUMBERS OF DEATHS FOR LEADING CAUSES OF DEATH BY AGE, RACE, AND SEX
NORTH CAROLINA RESIDENTS UNDER AGE 20, 1974-78

AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	RACE AND SEX							
			TOTAL WHITES	WHITE MALES	WHITE FEMALES	TOTAL NONWHITES	NONWHITE MALES	NONWHITE FEMALES	TOTAL MALES	TOTAL FEMALES
UNDER 1 YR	PERINATAL CONDITIONS	3,823	2,112	1,247	865	1,711	974	737	2,221	1,602
	CONGENITAL ANOMALIES	1,120	795	419	376	325	167	158	586	534
	SIDS	766	310	187	123	456	258	198	445	321
	UNINTENTIONAL INJURIES	210	114	65	49	96	51	45	116	94
	MOTOR-VEHICLE	49	42	18	24	7	3	4	21	28
	OTHER	161	72	47	25	89	48	41	95	66
	PNEUMONIA AND INFLUENZA	231	104	66	38	127	71	56	137	94
	HOMICIDE	16	5	1	4	11	7	4	8	8
	CANCER	13	9	1	8	4	2	2	3	10
	HEART DISEASE	115	63	41	22	52	30	22	71	44
	ALL CAUSES	7,270	4,011	2,333	1,678	3,259	1,838	1,421	4,171	3,099
AGES 1 - 4	CONGENITAL ANOMALIES	173	118	65	53	55	28	27	93	80
	UNINTENTIONAL INJURIES	545	286	170	116	259	143	116	313	232
	MOTOR-VEHICLE	239	125	67	58	114	59	55	126	113
	OTHER	306	161	103	58	145	84	61	187	119
	PNEUMONIA AND INFLUENZA	74	34	17	17	40	21	19	38	36
	HOMICIDE	37	15	6	9	22	12	10	18	19
	CANCER	86	57	36	21	29	17	12	53	33
	HEART DISEASE	38	18	7	11	20	7	13	14	24
	ALL CAUSES	1,305	733	418	315	572	310	262	728	577
AGES 5 - 9	CONGENITAL ANOMALIES	50	35	15	20	15	5	10	20	30
	UNINTENTIONAL INJURIES	510	328	200	128	182	119	63	319	191
	MOTOR-VEHICLE	310	199	118	81	111	72	39	190	120
	OTHER	200	129	82	47	71	47	24	129	71
	PNEUMONIA AND INFLUENZA	21	11	8	3	10	6	4	14	7
	HOMICIDE	13	6	2	4	7	3	4	5	8
	CANCER	125	92	52	40	33	19	14	71	54
	HEART DISEASE	22	17	10	7	5	3	2	13	9
	ALL CAUSES	942	629	356	273	313	190	123	546	396
AGES 10 - 14	CONGENITAL ANOMALIES	51	34	24	10	17	9	8	33	18
	UNINTENTIONAL INJURIES	557	372	283	89	185	139	46	422	135
	MOTOR-VEHICLE	286	216	164	52	70	45	25	209	77
	OTHER	271	156	119	37	115	94	21	213	58
	PNEUMONIA AND INFLUENZA	32	23	12	11	9	5	4	17	15
	HOMICIDE	31	16	11	5	15	6	9	17	14
	CANCER	95	68	37	31	27	15	12	52	43
	HEART DISEASE	37	21	14	7	16	5	11	19	18
	SUICIDE	24	22	17	5	2	1	1	18	6
	ALL CAUSES	1,005	671	464	207	334	212	122	676	329
AGES 15 - 19	CONGENITAL ANOMALIES	47	35	21	14	12	8	4	29	18
	UNINTENTIONAL INJURIES	1,912	1,492	1,161	331	420	349	71	1,510	402
	MOTOR-VEHICLE	1,345	1,108	836	272	237	192	45	1,028	317
	OTHER	567	384	325	59	183	157	26	482	85
	PNEUMONIA AND INFLUENZA	36	23	15	8	13	7	6	22	14
	HOMICIDE	230	116	82	34	114	85	29	167	63
	CANCER	152	108	77	31	44	26	18	103	49
	HEART DISEASE	59	30	21	9	29	19	10	40	19
	SUICIDE	209	174	126	48	35	29	6	155	54
	ALL CAUSES	3,003	2,223	1,647	576	780	576	204	2,223	780
AGES 1 - 19	CONGENITAL ANOMALIES	321	222	125	97	99	50	49	175	146
	UNINTENTIONAL INJURIES	3,524	2,478	1,814	664	1,046	750	296	2,564	960
	MOTOR-VEHICLE	2,180	1,648	1,185	463	532	368	164	1,553	627
	OTHER	1,344	830	629	201	514	382	132	1,011	333
	PNEUMONIA AND INFLUENZA	163	91	52	39	72	39	33	91	72
	HOMICIDE	311	153	101	52	158	106	52	207	104
	CANCER	458	325	202	123	133	77	56	279	179
	HEART DISEASE	156	86	52	34	70	34	36	86	70
	SUICIDE	233	196	143	53	37	30	7	173	60
	ALL CAUSES	6,255	4,256	2,885	1,371	1,999	1,288	711	4,173	2,082

TABLE 2
DEATH RATES FOR LEADING CAUSES BY AGE, RACE, AND SEX
NORTH CAROLINA RESIDENTS UNDER AGE 20, 1974-78

AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	RACE AND SEX							
			TOTAL WHITES	WHITE MALES	WHITE FEMALES	TOTAL NONWHITES	NONWHITE MALES	NONWHITE FEMALES	TOTAL MALES	TOTAL FEMALES
UNDER 1 YR	PERINATAL CONDITIONS	926.5	751.6	861.8	634.6	1299.7	1457.5	1137.0	1050.0	796.5
	CONGENITAL ANOMALIES	271.4	282.9	289.6	275.9	246.9	249.9	243.8	277.0	265.5
	SIDS	185.6	110.3	129.2	90.2	346.4	386.1	305.5	210.4	159.6
	UNINTENTIONAL INJURIES	50.9	40.6	44.9	35.9	72.9	76.3	69.4	54.8	46.7
	MOTOR-VEHICLE	11.9	14.9	12.4	17.6	5.3	4.5	6.2	9.9	13.9
	OTHER	39.0	25.6	32.5	18.3	67.6	71.8	63.3	44.9	32.8
	PNEUMONIA AND INFLUENZA	56.0	37.0	45.6	27.9	96.5	106.2	86.4	64.8	46.7
	HOMICIDE	3.9	1.8	0.7	2.9	8.4	10.5	6.2	3.8	4.0
	CANCER	3.2	3.2	0.7	5.9	3.0	3.0	3.1	1.4	5.0
	HEART DISEASE	27.9	22.4	28.3	16.1	39.5	44.9	33.9	33.6	21.9
	ALL CAUSES	1761.8	1427.4	1612.3	1231.1	2475.6	2750.4	2192.2	1971.9	1540.8
AGES 1 - 4	CONGENITAL ANOMALIES	10.3	9.9	10.7	9.2	11.2	11.4	11.0	10.9	9.7
	UNINTENTIONAL INJURIES	32.5	24.1	27.9	20.1	52.7	58.0	47.3	36.6	28.2
	MOTOR-VEHICLE	14.2	10.5	11.0	10.0	23.2	23.9	22.4	14.7	13.7
	OTHER	18.2	13.6	16.9	10.0	29.5	34.1	24.9	21.8	14.5
	PNEUMONIA AND INFLUENZA	4.4	2.9	2.8	2.9	8.1	8.5	7.7	4.4	4.4
	HOMICIDE	2.2	1.3	1.0	1.6	4.5	4.9	4.1	2.1	2.3
	CANCER	5.1	4.8	5.9	3.6	5.9	6.9	4.9	6.2	4.0
	HEART DISEASE	2.3	1.5	1.1	1.9	4.1	2.8	5.3	1.8	2.9
	ALL CAUSES	77.7	61.7	68.5	54.5	116.4	125.8	106.8	85.0	70.1
AGES 5 - 9	CONGENITAL ANOMALIES	2.1	2.1	1.8	2.5	2.2	1.4	2.9	1.7	2.6
	UNINTENTIONAL INJURIES	21.8	19.9	23.6	16.0	26.4	34.3	18.4	26.7	16.7
	MOTOR-VEHICLE	13.3	12.1	13.9	10.1	16.1	20.8	11.4	15.9	10.5
	OTHER	8.6	7.8	9.7	5.9	10.3	13.5	7.0	10.8	6.2
	PNEUMONIA AND INFLUENZA	0.9	0.7	0.9	0.4	1.5	1.7	1.2	1.2	0.6
	HOMICIDE	0.6	0.4	0.2	0.5	1.0	0.9	1.2	0.4	0.7
	CANCER	5.3	5.6	6.1	5.0	4.8	5.5	4.1	5.9	4.7
	HEART DISEASE	0.9	1.0	1.2	0.9	0.7	0.9	0.6	1.1	0.8
	ALL CAUSES	40.3	38.2	42.1	34.1	45.4	54.8	36.0	45.7	34.6
AGES 10 - 14	CONGENITAL ANOMALIES	2.0	1.9	2.7	1.2	2.3	2.4	2.2	2.6	1.5
	UNINTENTIONAL INJURIES	22.3	21.2	31.4	10.4	25.2	37.6	12.6	33.2	11.0
	MOTOR-VEHICLE	11.5	12.3	18.2	8.1	9.5	12.2	6.8	16.4	6.3
	OTHER	10.9	8.9	13.2	4.3	15.6	25.4	5.7	16.8	4.7
	PNEUMONIA AND INFLUENZA	1.3	1.3	1.3	1.3	1.2	1.4	1.1	1.3	1.2
	HOMICIDE	1.2	0.9	1.2	0.6	2.0	1.6	2.5	1.3	1.1
	CANCER	3.8	3.9	4.1	3.6	3.7	4.1	3.3	4.1	3.5
	HEART DISEASE	1.5	1.2	1.6	0.8	2.2	1.4	3.0	1.5	1.5
	SUICIDE	1.0	1.3	1.9	0.6	0.3	0.3	0.3	1.4	0.5
	ALL CAUSES	40.3	38.2	51.4	24.2	45.4	57.4	33.4	53.2	26.9
AGES 15 - 19	CONGENITAL ANOMALIES	1.7	1.8	2.1	1.5	1.5	2.0	1.0	2.0	1.3
	UNINTENTIONAL INJURIES	69.4	75.9	113.6	35.1	53.1	87.2	18.2	106.2	30.1
	MOTOR-VEHICLE	48.8	56.4	81.8	28.8	30.0	48.0	11.5	72.3	23.7
	OTHER	20.6	19.5	31.8	6.3	23.1	39.2	6.6	33.9	6.4
	PNEUMONIA AND INFLUENZA	1.3	1.2	1.5	0.8	1.6	1.7	1.5	1.5	1.0
	HOMICIDE	8.3	5.9	8.0	3.6	14.4	21.2	7.4	11.7	4.7
	CANCER	5.5	5.5	7.5	3.3	5.6	6.5	4.6	7.2	3.7
	HEART DISEASE	2.1	1.5	2.1	1.0	3.7	4.7	2.6	2.8	1.4
	SUICIDE	7.6	8.9	12.3	5.1	4.4	7.2	1.5	10.9	4.0
	ALL CAUSES	108.9	113.1	161.2	61.0	98.6	143.9	52.2	156.3	58.4
AGES 1 - 19	CONGENITAL ANOMALIES	3.5	3.4	3.7	3.1	3.7	3.7	3.6	3.7	3.2
	UNINTENTIONAL INJURIES	38.0	37.8	53.7	20.9	38.6	55.0	22.0	54.1	21.2
	MOTOR-VEHICLE	23.5	25.1	35.1	14.6	19.7	27.0	12.2	32.7	13.9
	OTHER	14.5	12.7	18.6	6.3	19.0	28.0	9.8	21.3	7.4
	PNEUMONIA AND INFLUENZA	1.8	1.4	1.5	1.2	2.7	2.9	2.5	1.9	1.6
	HOMICIDE	3.4	2.3	3.0	1.6	5.8	7.8	3.9	4.4	2.3
	CANCER	4.9	5.0	6.0	3.9	4.9	5.8	4.2	5.9	4.0
	HEART DISEASE	1.7	1.3	1.5	1.1	2.6	2.5	2.7	1.8	1.5
	SUICIDE	2.5	3.0	4.2	1.7	1.4	2.2	0.5	3.6	1.3
	ALL CAUSES	67.5	64.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE 3

NUMBERS OF DEATHS FOR LEADING CAUSES OF DEATH BY AGE, RACE, AND SEX
NORTH CAROLINA RESIDENTS UNDER AGE 20, 1983-87

AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	RACE AND SEX							
			TOTAL WHITES	WHITE MALES	WHITE FEMALES	TOTAL NONWHITES	NONWHITE MALES	NONWHITE FEMALES	TOTAL MALES	TOTAL FEMALES
UNDER 1 YR	PERINATAL CONDITIONS	2,738	1,372	762	610	1,366	749	617	1,511	1,227
	CONGENITAL ANOMALIES	1,088	741	400	341	347	189	158	589	499
	SIDS	701	382	234	148	319	180	139	414	287
	UNINTENTIONAL INJURIES	131	64	38	26	67	38	29	76	55
	MOTOR-VEHICLE	34	18	10	8	16	9	7	19	15
	OTHER	97	46	28	18	51	29	22	57	40
	PNEUMONIA AND INFLUENZA	75	26	15	11	49	30	19	45	30
	HOMICIDE	31	15	11	4	16	9	7	20	11
	CANCER	17	11	6	5	6	2	4	8	9
	HEART DISEASE	112	59	36	23	53	21	32	57	55
	ALL CAUSES	5,439	2,973	1,688	1,285	2,466	1,365	1,101	3,053	2,386
AGES 1 - 4	CONGENITAL ANOMALIES	109	74	42	32	35	21	14	63	46
	UNINTENTIONAL INJURIES	389	223	139	84	166	93	73	232	157
	MOTOR-VEHICLE	152	96	56	40	56	34	22	90	62
	OTHER	237	127	83	44	110	59	51	142	95
	PNEUMONIA AND INFLUENZA	26	11	7	4	15	12	3	19	7
	HOMICIDE	34	13	7	6	21	12	9	19	15
	CANCER	47	33	13	20	14	10	4	23	24
	HEART DISEASE	42	24	11	13	18	8	10	19	23
	ALL CAUSES	925	542	314	228	383	224	159	538	387
AGES 5 - 9	CONGENITAL ANOMALIES	38	22	9	13	16	9	7	18	20
	UNINTENTIONAL INJURIES	295	170	117	53	125	91	34	208	87
	MOTOR-VEHICLE	176	110	73	37	66	49	17	122	54
	OTHER	119	60	44	16	59	42	17	86	33
	PNEUMONIA AND INFLUENZA	6	2	0	2	4	2	2	2	4
	HOMICIDE	24	8	2	6	16	8	8	10	14
	CANCER	65	47	25	22	18	13	5	38	27
	HEART DISEASE	19	11	6	5	8	3	5	9	10
	ALL CAUSES	576	339	200	139	237	152	85	352	224
AGES 10 - 14	CONGENITAL ANOMALIES	26	17	14	3	9	4	5	18	8
	UNINTENTIONAL INJURIES	402	271	199	72	131	100	31	299	103
	MOTOR-VEHICLE	237	179	126	53	58	40	18	166	71
	OTHER	165	92	73	19	73	60	13	133	32
	PNEUMONIA AND INFLUENZA	8	5	1	4	3	3	0	4	4
	HOMICIDE	28	14	7	7	14	7	7	14	14
	CANCER	57	44	25	19	13	7	6	32	25
	HEART DISEASE	25	16	9	7	9	4	5	13	12
	SUICIDE	29	28	20	8	1	1	0	21	8
	ALL CAUSES	701	470	315	155	231	152	79	467	234
AGES 15 - 19	CONGENITAL ANOMALIES	35	19	12	7	16	9	7	21	14
	UNINTENTIONAL INJURIES	1,352	1,094	812	282	258	205	53	1,017	335
	MOTOR-VEHICLE	1,043	876	623	253	167	127	40	750	293
	OTHER	309	218	189	29	91	78	13	267	42
	PNEUMONIA AND INFLUENZA	18	10	7	3	8	5	3	12	6
	HOMICIDE	155	67	47	20	88	63	25	110	45
	CANCER	100	76	44	32	24	13	11	57	43
	HEART DISEASE	55	30	20	10	25	16	9	36	19
	SUICIDE	221	195	160	35	26	24	2	184	37
	ALL CAUSES	2,176	1,640	1,187	453	536	390	146	1,577	599
AGES 1 - 19	CONGENITAL ANOMALIES	208	132	77	55	76	43	33	120	88
	UNINTENTIONAL INJURIES	2,438	1,758	1,267	491	680	489	191	1,756	682
	MOTOR-VEHICLE	1,608	1,261	878	383	347	250	97	1,128	480
	OTHER	830	497	389	108	333	239	94	628	202
	PNEUMONIA AND INFLUENZA	58	28	15	13	30	22	8	37	21
	HOMICIDE	241	102	63	39	139	90	49	153	88
	CANCER	269	200	107	93	69	43	26	150	119
	HEART DISEASE	141	81	46	35	60	31	29	77	64
	SUICIDE	250	223	180	43	27	25	2	205	45
	ALL CAUSES	4,378	2,991	2,016	975	1,387	918	469	2,934	1,444

TABLE 4
DEATH RATES FOR LEADING CAUSES BY AGE, RACE, AND SEX
NORTH CAROLINA RESIDENTS UNDER AGE 20, 1983-87

AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	RACE AND SEX							
			TOTAL WHITES	WHITE MALES	WHITE FEMALES	TOTAL NONWHITES	NONWHITE MALES	NONWHITE FEMALES	TOTAL MALES	TOTAL FEMALES
UNDER 1 YR	PERINATAL CONDITIONS	618.1	451.0	487.7	412.2	984.8	1068.4	899.4	667.5	566.5
	CONGENITAL ANOMALIES	245.6	243.6	256.0	230.4	250.2	269.6	230.3	260.2	230.4
	SIDS	158.3	125.6	149.8	100.0	230.0	256.8	202.6	182.9	132.5
	UNINTENTIONAL INJURIES	29.6	21.0	24.3	17.6	48.3	54.2	42.3	33.6	25.4
	MOTOR-VEHICLE	7.7	5.9	6.4	5.4	11.5	12.8	10.2	8.4	6.9
	OTHER	21.9	15.1	17.9	12.2	36.8	41.4	32.1	25.2	18.5
	PNEUMONIA AND INFLUENZA	16.9	8.5	9.6	7.4	35.3	42.8	27.7	19.9	13.9
	HOMICIDE	7.0	4.9	7.0	2.7	11.5	12.8	10.2	8.8	5.1
	CANCER	3.8	3.6	3.8	3.4	4.3	2.9	5.8	3.5	4.2
	HEART DISEASE	25.3	19.4	23.0	15.5	38.2	30.0	46.6	25.2	25.4
	ALL CAUSES	1227.9	977.2	1080.3	868.3	1777.8	1947.0	1605.0	1348.8	1101.6
AGES 1 - 4	CONGENITAL ANOMALIES	6.6	6.4	7.1	5.6	7.1	8.6	5.6	7.6	5.6
	UNINTENTIONAL INJURIES	23.6	19.3	23.6	14.8	33.7	38.0	29.4	27.8	19.3
	MOTOR-VEHICLE	9.2	8.3	9.5	7.1	11.4	13.9	8.9	10.8	7.6
	OTHER	14.4	11.0	14.1	7.8	22.3	24.1	20.6	17.0	11.7
	PNEUMONIA AND INFLUENZA	1.6	1.0	1.2	0.7	3.0	4.9	1.2	2.3	0.9
	HOMICIDE	2.1	1.1	1.2	1.1	4.3	4.9	3.6	2.3	1.8
	CANCER	2.8	2.9	2.2	3.5	2.8	4.1	1.6	2.8	2.9
	HEART DISEASE	2.5	2.1	1.9	2.3	3.7	3.3	4.0	2.3	2.8
	ALL CAUSES	56.1	46.8	53.2	40.2	77.7	91.6	64.1	64.5	47.5
AGES 5 - 9	CONGENITAL ANOMALIES	1.8	1.5	1.2	1.8	2.4	2.7	2.1	1.7	1.9
	UNINTENTIONAL INJURIES	13.8	11.5	15.5	7.3	18.8	27.4	10.2	19.2	8.3
	MOTOR-VEHICLE	8.2	7.5	9.7	5.1	9.9	14.8	5.1	11.2	5.1
	OTHER	5.6	4.1	5.8	2.2	8.9	12.7	5.1	7.9	3.1
	PNEUMONIA AND INFLUENZA	0.3	0.1	0.0	0.3	0.6	0.6	0.6	0.2	0.4
	HOMICIDE	1.1	0.5	0.3	0.8	2.4	2.4	2.4	0.9	1.3
	CANCER	3.0	3.2	3.3	3.1	2.7	3.9	1.5	3.5	2.6
	HEART DISEASE	0.9	0.7	0.8	0.7	1.2	0.9	1.5	0.8	0.9
	ALL CAUSES	26.9	23.0	26.5	19.3	35.6	45.8	25.5	32.4	21.2
AGES 10 - 14	CONGENITAL ANOMALIES	1.1	1.0	1.7	0.4	1.3	1.1	1.4	1.5	0.7
	UNINTENTIONAL INJURIES	17.3	16.7	24.0	9.1	18.5	28.4	8.7	25.3	9.0
	MOTOR-VEHICLE	10.2	11.0	15.2	8.7	8.2	11.3	5.1	14.1	6.2
	OTHER	7.1	5.7	8.8	2.4	10.3	17.0	3.7	11.3	2.8
	PNEUMONIA AND INFLUENZA	0.3	0.3	0.1	0.5	0.4	0.9	0.0	0.3	0.3
	HOMICIDE	1.2	0.9	0.8	0.9	2.0	2.0	2.0	1.2	1.2
	CANCER	2.4	2.7	3.0	2.4	1.8	2.0	1.7	2.7	2.2
	HEART DISEASE	1.1	1.0	1.1	0.9	1.3	1.1	1.4	1.1	1.0
	SUICIDE	1.2	1.7	2.4	1.0	0.1	0.3	0.0	1.8	0.7
	ALL CAUSES	30.1	29.0	38.1	19.5	32.6	43.1	22.2	39.6	20.4
AGES 15 - 19	CONGENITAL ANOMALIES	1.4	1.0	1.3	0.8	2.2	2.5	1.9	1.6	1.1
	UNINTENTIONAL INJURIES	52.7	59.6	86.3	31.5	35.3	56.7	14.4	78.1	26.5
	MOTOR-VEHICLE	40.7	47.7	66.2	28.3	22.9	35.1	10.9	57.6	23.2
	OTHER	12.0	11.9	20.1	3.2	12.5	21.6	3.5	20.5	3.3
	PNEUMONIA AND INFLUENZA	0.7	0.5	0.7	0.3	1.1	1.4	0.8	0.9	0.5
	HOMICIDE	6.0	3.7	5.0	2.2	12.1	17.4	6.8	8.4	3.6
	CANCER	3.9	4.1	4.7	3.6	3.3	3.6	3.0	4.4	3.4
	HEART DISEASE	2.1	1.6	2.1	1.1	3.4	4.4	2.4	2.8	1.5
	SUICIDE	8.6	10.6	17.0	3.9	3.6	6.6	0.5	14.1	2.9
	ALL CAUSES	84.8	89.4	126.2	50.7	73.4	107.8	39.6	121.1	47.4
AGES 1 - 19	CONGENITAL ANOMALIES	2.4	2.2	2.5	1.8	2.9	3.3	2.5	2.7	2.1
	UNINTENTIONAL INJURIES	28.1	28.9	40.7	16.5	26.2	37.9	14.6	39.9	15.9
	MOTOR-VEHICLE	18.5	20.7	28.2	12.9	13.4	19.4	7.4	25.6	11.2
	OTHER	9.6	8.2	12.5	3.6	12.8	18.5	7.2	14.3	4.7
	PNEUMONIA AND INFLUENZA	0.7	0.5	0.5	0.4	1.2	1.7	0.6	0.8	0.5
	HOMICIDE	2.8	1.7	2.0	1.3	5.4	7.0	3.8	3.5	2.1
	CANCER	3.1	3.3	3.4	3.1	2.7	3.3	2.0	3.4	2.8
	HEART DISEASE	1.6	1.3	1.5	1.2	2.3	2.4	2.2	1.7	1.5
	SUICIDE	2.9	3.7	5.8	1.4	1.0	1.9	0.2	4.7	1.1
	ALL CAUSES	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE 5
DEATHS DUE TO SELECTED UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES BY AGE, RACE, AND SEX
NORTH CAROLINA RESIDENTS UNDER AGE 20, 1974-78

AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	RACE AND SEX							
			TOTAL WHITES	WHITE MALES	WHITE FEMALES	TOTAL NONWHITES	NONWHITE MALES	NONWHITE FEMALES	TOTAL MALES	TOTAL FEMALES
UNDER 1 YR	UNINT. NON-MOTOR-VEHICLE INJURIES	161	72	47	25	89	48	41	95	66
	DROWNING	13	5	4	1	8	3	5	7	6
	FIRES	38	12	9	3	26	13	13	22	16
	FIREARMS	1	1	1	0	0	0	0	1	0
	ACCIDENTAL MECHANICAL SUFFOCAT'N	25	14	9	5	11	4	7	13	12
	POISONING BY SOLID/LIQ. SUBSTANCE	6	4	2	2	2	2	0	4	2
	FALLS	8	3	1	2	5	3	2	4	4
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	42	19	13	6	23	14	9	27	15
AGES 1 - 4	UNINT. NON-MOTOR-VEHICLE INJURIES	306	161	103	58	145	84	61	187	119
	DROWNING	53	39	30	9	14	13	1	43	10
	FIRES	107	36	20	16	71	34	37	54	53
	FIREARMS	14	8	6	2	6	2	4	8	6
	ACCIDENTAL MECHANICAL SUFFOCAT'N	14	12	8	4	2	1	1	9	5
	POISONING BY SOLID/LIQ. SUBSTANCE	26	14	9	5	12	8	4	17	9
	FALLS	18	8	2	6	10	7	3	9	9
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	29	16	9	7	13	9	4	18	11
AGES 5 - 9	UNINT. NON-MOTOR-VEHICLE INJURIES	200	129	82	47	71	47	24	129	71
	DROWNING	64	41	31	10	23	20	3	51	13
	FIRES	49	18	7	11	31	15	16	22	27
	FIREARMS	23	21	17	4	2	1	1	18	5
	ACCIDENTAL MECHANICAL SUFFOCAT'N	6	5	3	2	1	1	0	4	2
	POISONING BY SOLID/LIQ. SUBSTANCE	2	1	1	0	1	1	0	2	0
	FALLS	4	3	1	2	1	0	1	1	3
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	9	8	1	7	1	1	0	2	7
AGES 10 - 14	UNINT. NON-MOTOR-VEHICLE INJURIES	271	156	119	37	115	94	21	213	58
	DROWNING	118	46	36	10	72	65	7	101	17
	FIRES	20	7	4	3	13	6	7	10	10
	FIREARMS	50	42	35	7	8	6	2	41	9
	ACCIDENTAL MECHANICAL SUFFOCAT'N	12	10	10	0	2	2	0	12	0
	POISONING BY SOLID/LIQ. SUBSTANCE	5	4	3	1	1	1	0	4	1
	FALLS	9	5	2	3	4	4	0	6	3
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	12	7	1	6	5	3	2	4	8
AGES 15 - 19	UNINT. NON-MOTOR-VEHICLE INJURIES	567	384	325	59	183	157	26	482	85
	DROWNING	227	122	109	13	105	98	7	207	20
	FIRES	44	30	22	8	14	5	9	27	17
	FIREARMS	57	45	41	4	12	12	0	53	4
	ACCIDENTAL MECHANICAL SUFFOCAT'N	2	1	1	0	1	1	0	2	0
	POISONING BY SOLID/LIQ. SUBSTANCE	37	31	23	8	6	4	2	27	10
	FALLS	24	17	15	2	7	7	0	22	2
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	12	8	7	1	4	2	2	9	3
UNDER AGE 20	UNINT. NON-MOTOR-VEHICLE INJURIES	1,505	902	676	226	603	430	173	1,106	399
	DROWNING	475	253	210	43	222	199	23	409	66
	FIRES	258	103	62	41	155	73	82	135	123
	FIREARMS	145	117	100	17	28	21	7	121	24
	ACCIDENTAL MECHANICAL SUFFOCAT'N	59	42	31	11	17	9	8	40	19
	POISONING BY SOLID/LIQ. SUBSTANCE	76	54	38	16	22	16	6	54	22
	FALLS	63	36	21	15	27	21	6	42	21
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	104	0	31	27	46	29	17	60	44

TABLE 6
DEATH RATES FOR SELECTED UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES BY AGE, RACE, AND SEX
NORTH CAROLINA RESIDENTS UNDER AGE 20, 1974-78

AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	RACE AND SEX							
			TOTAL WHITES	WHITE MALES	WHITE FEMALES	TOTAL NONWHITES	NONWHITE MALES	NONWHITE FEMALES	TOTAL MALES	TOTAL FEMALES
UNDER 1 YR	UNINT. NON-MOTOR-VEHICLE INJURIES	39.0	25.6	32.5	18.3	67.6	71.8	63.3	44.9	32.8
	DROWNING	3.2	1.8	2.8	0.7	6.1	4.5	7.7	3.3	3.0
	FIRES	9.2	4.3	6.2	2.2	19.7	19.5	20.1	10.4	8.0
	FIREARMS	0.2	0.4	0.7	0.0	0.0	0.0	0.0	0.5	0.0
	ACCIDENTAL MECHANICAL SUFFOCAT'N	6.1	5.0	6.2	3.7	8.4	6.0	10.8	6.1	6.0
	POISONING BY SOLID/LIQ. SUBSTANCE	1.5	1.4	1.4	1.5	1.5	3.0	0.0	1.9	1.0
	FALLS	1.9	1.1	0.7	1.5	3.8	4.5	3.1	1.9	2.0
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	10.2	6.8	9.0	4.4	17.5	20.9	13.9	12.8	7.5
AGES 1 - 4	UNINT. NON-MOTOR-VEHICLE INJURIES	18.2	13.6	16.9	10.0	29.5	35.5	24.9	21.8	14.3
	DROWNING	3.2	3.3	4.9	1.6	2.8	5.5	0.4	5.0	1.2
	FIRES	6.4	3.0	3.3	2.8	14.4	14.4	15.1	6.3	6.4
	FIREARMS	0.8	0.7	1.0	0.3	1.2	0.8	1.6	0.9	0.7
	ACCIDENTAL MECHANICAL SUFFOCAT'N	0.8	1.0	1.3	0.7	0.4	0.4	0.4	1.1	0.6
	POISONING BY SOLID/LIQ. SUBSTANCE	1.5	1.2	1.5	0.9	2.4	3.4	1.6	2.0	1.1
	FALLS	1.1	0.7	0.3	1.0	2.0	3.0	1.2	1.1	1.1
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	1.7	1.3	1.5	1.2	2.6	3.8	1.6	2.1	1.3
AGES 5 - 9	UNINT. NON-MOTOR-VEHICLE INJURIES	8.6	7.8	9.7	5.9	10.3	13.5	7.0	10.8	6.2
	DROWNING	2.7	2.5	3.7	1.2	3.3	5.8	0.9	4.3	1.1
	FIRES	2.1	1.1	0.8	1.4	4.5	4.3	4.7	1.8	2.4
	FIREARMS	1.0	1.3	2.0	0.5	0.3	0.3	0.3	1.5	0.4
	ACCIDENTAL MECHANICAL SUFFOCAT'N	0.3	0.3	0.4	0.2	0.1	0.3	0.0	0.3	0.2
	POISONING BY SOLID/LIQ. SUBSTANCE	0.1	0.1	0.1	0.0	0.1	0.3	0.0	0.2	0.0
	FALLS	0.2	0.2	0.1	0.2	0.1	0.0	0.3	0.1	0.3
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	0.4	0.5	0.1	0.9	0.1	0.3	0.0	0.2	0.6
AGES 10 - 14	UNINT. NON-MOTOR-VEHICLE INJURIES	10.9	8.9	13.2	4.3	15.6	25.4	5.7	16.8	4.7
	DROWNING	4.7	2.6	4.0	1.2	9.8	17.6	1.9	7.9	1.4
	FIRES	0.8	0.4	0.4	0.4	1.8	1.6	1.9	0.8	0.8
	FIREARMS	2.0	2.4	3.9	0.8	1.1	1.6	0.5	3.2	0.7
	ACCIDENTAL MECHANICAL SUFFOCAT'N	0.5	0.6	1.1	0.0	0.3	0.5	0.0	0.9	0.0
	POISONING BY SOLID/LIQ. SUBSTANCE	0.2	0.2	0.3	0.1	0.1	0.3	0.0	0.3	0.1
	FALLS	0.4	0.3	0.2	0.4	0.5	1.1	0.0	0.5	0.2
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	0.5	0.4	0.1	0.7	0.7	0.8	0.5	0.3	0.7
AGES 15 - 19	UNINT. NON-MOTOR-VEHICLE INJURIES	20.6	19.5	31.8	6.3	23.1	39.2	6.6	33.9	6.4
	DROWNING	8.2	8.2	10.7	1.4	13.3	24.5	1.8	14.6	1.5
	FIRES	1.6	1.5	2.2	0.8	1.8	1.2	2.3	1.9	1.3
	FIREARMS	2.1	2.3	4.0	0.4	1.5	3.0	0.0	3.7	0.3
	ACCIDENTAL MECHANICAL SUFFOCAT'N	0.1	0.1	0.1	0.0	0.1	0.2	0.0	0.1	0.0
	POISONING BY SOLID/LIQ. SUBSTANCE	1.3	1.6	2.3	0.8	0.8	1.0	0.5	1.9	0.7
	FALLS	0.9	0.9	1.5	0.2	0.9	1.7	0.0	1.5	0.1
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	0.4	0.4	0.7	0.1	0.5	0.5	0.5	0.6	0.2
UNDER AGE 20	UNINT. NON-MOTOR-VEHICLE INJURIES	15.5	13.2	19.2	6.8	21.2	30.1	12.3	22.3	8.4
	DROWNING	4.9	3.7	6.0	1.3	7.8	13.9	1.6	8.3	1.4
	FIRES	2.7	1.5	1.8	1.2	5.5	5.1	5.8	2.7	2.6
	FIREARMS	1.5	1.7	2.8	0.5	1.0	1.5	0.5	2.4	0.5
	ACCIDENTAL MECHANICAL SUFFOCAT'N	0.6	0.6	0.9	0.3	0.6	0.6	0.6	0.8	0.4
	POISONING BY SOLID/LIQ. SUBSTANCE	0.8	0.8	1.1	0.5	0.8	1.1	0.4	1.1	0.5
	FALLS	0.7	0.5	0.6	0.5	1.0	1.5	0.4	0.8	0.4
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	1.1	0.0	0.9	0.8	1.8	2.0	1.2	1.2	0.9

TABLE 7
DEATHS DUE TO SELECTED UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES BY AGE, RACE, AND SEX
NORTH CAROLINA RESIDENTS UNDER AGE 20, 1983-87

AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	RACE AND SEX							
			TOTAL WHITES	WHITE MALES	WHITE FEMALES	TOTAL NONWHITES	NONWHITE MALES	NONWHITE FEMALES	TOTAL MALES	TOTAL FEMALES
UNDER 1 YR	UNINT. NON-MOTOR-VEHICLE INJURIES	97	46	28	18	51	29	22	57	40
	DROWNING	9	6	3	3	3	3	0	6	3
	FIRES	13	7	5	2	6	4	2	9	4
	FIREARMS	1	1	1	0	0	0	0	1	0
	ACCIDENTAL MECHANICAL SUFFOCAT'N	28	14	10	4	14	7	7	17	11
	POISONING BY SOLID/LIQ. SUBSTANCE	0	0	0	0	0	0	0	0	0
	FALLS	3	2	1	1	1	1	0	2	1
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	24	8	3	5	16	10	6	13	11
AGES 1 - 4	UNINT. NON-MOTOR-VEHICLE INJURIES	237	127	83	44	110	59	51	142	95
	DROWNING	59	47	27	20	12	8	4	35	24
	FIRES	98	36	23	13	62	28	34	51	47
	FIREARMS	3	2	0	2	1	1	0	1	2
	ACCIDENTAL MECHANICAL SUFFOCAT'N	11	7	7	0	4	2	2	9	2
	POISONING BY SOLID/LIQ. SUBSTANCE	6	2	1	1	4	2	2	3	3
	FALLS	6	1	0	1	5	4	1	4	2
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	18	5	3	2	13	8	5	11	7
AGES 5 - 9	UNINT. NON-MOTOR-VEHICLE INJURIES	119	60	44	16	59	42	17	86	33
	DROWNING	34	20	15	5	14	10	4	25	9
	FIRES	43	18	11	7	25	19	6	30	13
	FIREARMS	7	3	3	0	4	2	2	5	2
	ACCIDENTAL MECHANICAL SUFFOCAT'N	4	2	2	0	2	2	0	4	0
	POISONING BY SOLID/LIQ. SUBSTANCE	2	0	0	0	2	2	0	2	0
	FALLS	0	0	0	0	0	0	0	0	0
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	4	0	0	0	4	1	3	1	3
AGES 10 - 14	UNINT. NON-MOTOR-VEHICLE INJURIES	165	92	73	19	73	60	13	133	32
	DROWNING	57	20	16	4	37	33	4	49	8
	FIRES	24	10	2	8	14	9	5	11	13
	FIREARMS	28	24	23	1	4	3	1	26	2
	ACCIDENTAL MECHANICAL SUFFOCAT'N	12	11	11	0	1	1	0	12	0
	POISONING BY SOLID/LIQ. SUBSTANCE	5	3	3	0	2	2	0	5	0
	FALLS	4	4	2	2	0	0	0	2	2
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	3	1	0	1	2	1	1	1	2
AGES 15 - 19	UNINT. NON-MOTOR-VEHICLE INJURIES	309	218	189	29	91	78	13	267	42
	DROWNING	111	56	53	3	55	52	3	105	6
	FIRES	21	13	8	5	8	4	4	12	9
	FIREARMS	37	29	28	1	8	7	1	35	2
	ACCIDENTAL MECHANICAL SUFFOCAT'N	7	6	6	0	1	1	0	7	0
	POISONING BY SOLID/LIQ. SUBSTANCE	23	18	12	6	5	3	2	15	8
	FALLS	11	8	8	0	3	1	2	9	2
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	5	2	0	2	3	3	0	3	2
UNDER AGE 20	UNINT. NON-MOTOR-VEHICLE INJURIES	927	543	417	126	384	268	116	685	242
	DROWNING	270	149	114	35	121	106	15	220	50
	FIRES	199	84	49	35	115	64	51	113	86
	FIREARMS	76	59	55	4	17	13	4	68	8
	ACCIDENTAL MECHANICAL SUFFOCAT'N	62	40	38	4	22	13	9	49	13
	POISONING BY SOLID/LIQ. SUBSTANCE	39	25	17	8	14	10	4	27	12
	FALLS	49	21	13	8	28	16	12	29	20
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	54	16	6	10	38	23	15	29	25

TABLE 8
DEATH RATES FOR SELECTED UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES BY AGE, RACE, AND SEX
NORTH CAROLINA RESIDENTS UNDER AGE 20, 1983-87

AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	RACE AND SEX							
			TOTAL WHITES	WHITE MALES	WHITE FEMALES	TOTAL NONWHITES	NONWHITE MALES	NONWHITE FEMALES	TOTAL MALES	TOTAL FEMALES
UNDER 1 YR	UNINT. NON-MOTOR-VEHICLE INJURIES	21.9	15.1	17.9	12.2	36.8	41.4	32.1	25.2	18.5
	DROWNING	2.0	2.0	1.9	2.0	2.2	4.3	0.0	2.7	1.4
	FIRES	2.9	2.3	3.2	1.4	4.3	5.7	2.9	4.0	1.8
	FIREARMS	0.2	0.3	0.6	0.0	0.0	0.0	0.0	0.4	0.0
	ACCIDENTAL MECHANICAL SUFFOCAT'N	6.3	4.6	6.4	2.7	10.1	10.0	10.2	7.5	5.1
	POISONING BY SOLID/LIO. SUBSTANCE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FALLS	0.7	0.7	0.6	0.7	0.7	1.4	0.0	0.9	0.5
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	5.4	2.6	1.9	3.4	11.5	14.3	8.7	5.7	5.1
AGES 1 - 4	UNINT. NON-MOTOR-VEHICLE INJURIES	14.4	11.0	14.1	7.8	22.3	24.0	20.6	17.0	11.7
	DROWNING	3.6	4.1	4.6	3.5	2.4	3.3	1.6	4.2	2.9
	FIRES	5.9	3.1	3.9	2.3	12.6	11.4	13.7	6.1	5.8
	FIREARMS	0.2	0.2	0.0	0.4	0.2	0.4	0.0	0.1	0.2
	ACCIDENTAL MECHANICAL SUFFOCAT'N	0.7	0.6	1.2	0.0	0.8	0.8	0.8	1.1	0.2
	POISONING BY SOLID/LIO. SUBSTANCE	0.4	0.2	0.2	0.2	0.8	0.8	0.8	0.4	0.4
	FALLS	0.4	0.1	0.0	0.2	1.0	1.6	0.4	0.5	0.2
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	1.1	0.4	0.5	0.4	2.6	3.3	2.0	1.3	0.9
AGES 5 - 9	UNINT. NON-MOTOR-VEHICLE INJURIES	5.6	4.1	2.1	2.2	8.9	12.7	5.1	7.9	3.1
	DROWNING	1.6	1.4	0.7	0.7	2.1	3.0	1.2	2.3	0.9
	FIRES	2.0	1.2	0.9	1.0	3.8	5.7	1.8	2.8	1.2
	FIREARMS	0.3	0.2	0.0	0.0	0.6	0.6	0.6	0.5	0.2
	ACCIDENTAL MECHANICAL SUFFOCAT'N	0.2	0.1	0.0	0.0	0.3	0.6	0.0	0.4	0.0
	POISONING BY SOLID/LIO. SUBSTANCE	0.1	0.0	0.0	0.0	0.3	0.6	0.0	0.2	0.0
	FALLS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	0.2	0.0	0.0	0.0	0.6	0.3	0.9	0.1	0.3
AGES 10 - 14	UNINT. NON-MOTOR-VEHICLE INJURIES	7.1	5.7	8.8	2.4	10.3	17.0	3.7	11.3	2.8
	DROWNING	2.4	1.2	1.9	0.5	5.2	9.4	1.1	4.2	0.7
	FIRES	1.0	0.6	0.2	1.0	2.0	2.6	1.4	0.9	1.1
	FIREARMS	1.2	1.5	2.8	0.1	0.6	0.9	0.3	2.2	0.2
	ACCIDENTAL MECHANICAL SUFFOCAT'N	0.5	0.7	1.3	0.0	0.1	0.3	0.0	1.0	0.0
	POISONING BY SOLID/LIO. SUBSTANCE	0.2	0.2	0.4	0.0	0.3	0.6	0.0	0.4	0.0
	FALLS	0.2	0.2	0.2	0.3	0.0	0.0	0.0	0.2	0.2
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	0.1	0.1	0.0	0.1	0.3	0.3	0.3	0.1	0.2
AGES 15 - 19	UNINT. NON-MOTOR-VEHICLE INJURIES	12.0	11.9	20.1	3.2	12.5	21.6	3.5	20.5	3.3
	DROWNING	4.3	3.1	5.6	0.3	7.5	14.4	0.8	8.1	0.5
	FIRES	0.8	0.7	0.9	0.6	1.1	1.1	1.1	0.9	0.7
	FIREARMS	1.4	1.6	3.0	0.1	1.1	1.9	0.3	2.7	0.2
	ACCIDENTAL MECHANICAL SUFFOCAT'N	0.3	0.3	0.6	0.0	0.1	0.3	0.0	0.5	0.0
	POISONING BY SOLID/LIO. SUBSTANCE	0.9	1.0	1.3	0.7	0.7	0.8	0.5	1.2	0.6
	FALLS	0.4	0.4	0.9	0.0	0.4	0.3	0.5	0.7	0.2
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	0.2	0.1	0.0	0.2	0.4	0.8	0.0	0.2	0.2
UNDER AGE 20	UNINT. NON-MOTOR-VEHICLE INJURIES	10.2	8.5	12.8	4.0	14.0	19.7	8.4	14.8	5.4
	DROWNING	3.0	2.3	3.5	1.1	4.4	7.8	1.1	4.8	1.1
	FIRES	2.2	1.3	1.5	1.1	4.2	4.7	3.7	2.4	1.9
	FIREARMS	0.8	0.9	1.7	0.1	0.6	1.0	0.3	1.5	0.2
	ACCIDENTAL MECHANICAL SUFFOCAT'N	0.7	0.6	1.1	0.1	0.8	1.0	0.7	1.1	0.3
	POISONING BY SOLID/LIO. SUBSTANCE	0.4	0.4	0.5	0.3	0.5	0.7	0.3	0.6	0.3
	FALLS	0.5	0.3	0.4	0.3	1.0	1.2	0.9	0.6	0.4
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	0.6	0.3	0.2	0.3	1.4	1.7	1.1	0.6	0.6

TABLE 9
STATISTICALLY SIGNIFICANT PERCENT CHANGES IN DEATH RATES FOR LEADING CAUSES BY AGE, RACE, AND SEX NORTH CAROLINA RESIDENTS UNDER AGE 20, 1974-78 TO 1983-87

			RACE AND SEX							
AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	TOTAL WHITES	WHITE MALES	WHITE FEMALES	TOTAL NONWHITES	NONWHITE MALES	NONWHITE FEMALES	TOTAL MALES	TOTAL FEMALES
UNDER 1 YR	PERINATAL CONDITIONS (1)	-21.4[1]	-29.3[1]	-33.4[1]	-23.5[1]	-10.8[1]	-13.7[1]	- 6.8[1]	-25.1[1]	-16.2[1]
	CONGENITAL ANOMALIES	- 9.5[3]	-13.9[2]		-16.5[3]					-13.2[3]
	SIDS	-14.7[2]				-33.6[1]	-33.5[1]	-33.7[1]	-13.1[3]	-17.0[3]
	UNINTENTIONAL INJURIES	-41.9[1]	-48.1[1]	-45.9[2]	-51.1[2]	-33.8[2]		-39.1[3]	-38.8[1]	-45.7[1]
	MOTOR-VEHICLE		-60.4[2]		-69.3[2]					-50.3[3]
	OTHER	-43.9[1]	-41.0[2]	-44.8[3]		-45.6[1]	-42.4[3]	-49.3[2]	-43.9[1]	-43.7[2]
	PNEUMONIA AND INFLUENZA (2)	-59.5[1]	-69.1[1]	-71.8[1]	-64.3[1]	-51.0[1]	-46.1[1]	-57.1[1]	-58.9[1]	-60.3[1]
	HOMICIDE		177.1[3]	918.7[3]					133.6[3]	
	ALL CAUSES	-30.3[1]	-31.5[1]	-33.0[1]	-29.5[1]	-28.2[1]	-29.2[1]	-26.8[1]	-31.6[1]	-28.5[1]
AGES 1 - 4	CONGENITAL ANOMALIES	-35.9[1]	-35.6[2]	-33.2[3]	-38.5[3]	-36.5[3]		-48.7[3]	-30.5[3]	-41.9[2]
	UNINTENTIONAL INJURIES	-27.3[1]	-20.0[3]		-26.2[3]	-36.0[1]	-34.5[2]	-37.8[2]	-23.9[2]	-31.7[1]
	MOTOR-VEHICLE	-35.3[1]				-51.0[1]	-41.9[3]	-60.5[1]	-26.7[3]	-44.6[1]
	OTHER	-21.2[2]				-24.3[3]	-29.2[3]		-22.1[3]	
	PNEUMONIA AND INFLUENZA	-64.2[1]	-66.8[2]		-76.0[2]	-62.6[2]		-84.4[2]	-48.7[3]	-80.4[1]
	CANCER	-44.4[2]	-40.6[3]	-62.7[2]		-51.8[3]			-55.5[2]	
	ALL CAUSES	-27.8[1]	-24.1[1]	-22.3[1]	-26.2[1]	-33.2[1]	-27.2[1]	-40.0[1]	-24.2[1]	-32.3[1]
AGES 5 - 9	UNINTENTIONAL INJURIES	-36.8[1]	-42.1[1]	-34.3[1]	-54.0[1]	-28.8[2]		-44.6[2]	-28.3[1]	-50.6[1]
	MOTOR-VEHICLE	-38.0[1]	-38.2[1]	-30.5[3]	-49.3[1]	-38.4[2]		-55.2[2]	-29.4[2]	-51.2[1]
	OTHER	-35.0[1]	-48.0[1]	-39.7[2]	-62.2[1]				-26.7[3]	-49.6[2]
	PNEUMONIA AND INFLUENZA	-68.8[3]	-79.7[3]						-84.3[3]	
	HOMICIDE	101.6[3]								
	CANCER	-43.2[1]	-42.9[2]	-46.0[3]					-41.2[2]	-45.8[2]
	ALL CAUSES	-33.2[1]	-39.8[1]	-36.9[1]	-43.4[1]	-21.5[2]		-29.0[3]	-29.1[1]	-38.7[1]
AGES 10 - 14	CONGENITAL ANOMALIES	-45.4[3]	-45.8[3]							
	UNINTENTIONAL INJURIES	-22.7[1]	-21.0[2]	-23.4[2]		-26.5[2]	-24.6[3]		-23.7[1]	
	NON-MOTOR-VEHICLE	-34.8[1]	-36.0[1]	-33.1[2]	-44.6[3]	-34.1[2]	-33.1[3]		-32.7[1]	-41.3[3]
	PNEUMONIA AND INFLUENZA	-73.2[1]	-76.4[2]	-90.9[3]					-74.7[3]	-71.6[3]
	CANCER	-35.8[2]				-50.0[3]				
	ALL CAUSES	-25.3[1]	-24.0[1]	-26.0[1]	-19.2[3]	-28.2[1]	-24.9[2]	-33.4[2]	-25.6[1]	-24.4[2]
AGES 15 - 19	UNINTENTIONAL INJURIES	-24.0[1]	-21.5[1]	-24.0[1]		-33.4[1]	-35.0[1]		-26.5[1]	
	MOTOR-VEHICLE	-16.7[1]	-15.3[1]	-19.0[1]		-23.6[2]	-26.8[2]		-20.3[1]	
	OTHER	-41.4[1]	-39.2[1]	-36.8[1]	-48.1[2]	-46.1[1]	-45.1[1]		-39.5[1]	-47.8[1]
	PNEUMONIA AND INFLUENZA	-46.3[3]	-53.4[3]							
	HOMICIDE	-27.6[2]	-38.1[2]	-37.7[2]					-28.1[2]	
	CANCER	-29.3[2]		-37.9[3]		-40.9[3]			-39.6[2]	
	SUICIDE			-38.0[2]					-29.6[3]	
	ALL CAUSES	-22.1[1]	-21.0[1]	-21.7[1]	-17.0[2]	-25.5[1]	-25.1[1]	-24.0[3]	-22.5[1]	-18.8[1]
AGES 1 - 19	CONGENITAL ANOMALIES	-30.9[1]	-35.9[1]	-33.1[2]	-39.4[2]				-26.1[3]	-36.3[1]
	UNINTENTIONAL INJURIES	-26.2[1]	-23.6[1]	-24.1[1]	-21.0[1]	-32.2[1]	-31.2[1]	-33.5[1]	-26.2[1]	-24.9[1]
	MOTOR-VEHICLE	-21.3[1]	-17.6[1]	-19.5[1]		-32.0[1]	-28.3[1]	-39.1[1]	-21.8[1]	-19.1[1]
	OTHER	-34.1[1]	-35.5[1]	-32.8[1]	-42.6[1]	-32.4[1]	-33.9[1]	-26.6[3]	-33.1[1]	-35.9[1]
	PNEUMONIA AND INFLUENZA (3)	-59.0[1]	-64.2[1]	-66.2[1]	-61.6[2]	-53.1[1]		-73.0[1]	-52.7[1]	-66.7[1]
	HOMICIDE	-17.3[3]	-28.2[2]	-32.2[3]					-20.4[3]	
	CANCER	-37.3[1]	-33.7[1]	-42.5[1]		-45.9[1]	-41.0[2]	-52.2[2]	-42.1[1]	-29.8[2]
	SUICIDE		-22.6[3]	-36.7[2]					-27.7[3]	
	ALL CAUSES	-25.3[1]	-24.3[1]	-24.1[1]	-24.0[1]	-27.6[1]	-24.8[1]	-32.0[1]	-24.3[1]	-26.7[1]

(1) Infant death rates for perinatal conditions have been changed to reflect the 0.8492 comparability ratio of the 9th and 8th ICD revisions for this cause of death.
(2) Infant death rates for pneumonia/influenza have been changed to reflect the 0.7471 comparability ratio of the 9th and 8th ICD revisions for this cause of daath.
(3) Death rates for pneumonia/influenza for ages 1-19 have been changed to reflect the 0.9264 comparability ratio of the 9th and 8th ICD revisions for this cause of death.
[1]Statistically significant at $p < 0.001$.
[2]Statistically significant at $p < 0.01$.
[3]Statistically significant at $p < 0.05$.

TABLE 10
STATISTICALLY SIGNIFICANT PERCENT CHANGES IN DEATH RATES FOR SELECTED UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES BY AGE, RACE, AND SEX NORTH CAROLINA RESIDENTS UNDER AGE 20, 1974-78 TO 1983-87

			RACE AND SEX							
AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	TOTAL WHITES	WHITE MALES	WHITE FEMALES	TOTAL NONWHITES	NONWHITE MALES	NONWHITE FEMALES	TOTAL MALES	TOTAL FEMALES
UNDER 1 YR	UNINT. NON-MOTOR-VEHICLE INJURIES	-43.9[1]	-41.0[2]	-44.8[3]		-45.6[1]	-42.4[3]	-49.3[2]	-43.9[1]	-43.7[2]
	FIRES	-68.1[1]				-78.1[1]	-70.7[3]	-85.5[3]	-61.8[3]	-76.8[2]
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	-46.8[3]	-61.1[3]	-78.6[3]					-55.0[3]	
AGES 1 - 4	UNINT. NON-MOTOR-VEHICLE INJURIES	-21.2[2]				-24.5[3]	-29.5[3]		-22.2[3]	
	DROWNING				126.5[3]					142.4[3]
	FIREARMS	-78.2[3]								
	POISONING BY SOLID/LIQ. SUBSTANCE	-76.5[2]	-85.3[3]	-88.5[3]					-81.9[2]	
	FALLS	-66.1[3]								
	INHALAT'N/INGEST'N CAUSING OBSTRUC.		-67.9[3]							
AGES 5 - 9	UNINT. NON-MOTOR-VEHICLE INJURIES	-35.0[1]	-48.0[3]	-78.1[1]	-62.2[1]				-26.7[3]	-49.6[2]
	DROWNING	-42.0[2]	-45.5[3]	-81.9[1]					-46.1[3]	
	FIRES							-61.5[3]		
	FIREARMS	-66.8[3]	-84.0[2]							
AGES 10 - 14	UNINT. NON-MOTOR-VEHICLE INJURIES	-34.8[1]	-36.0[1]	-33.1[2]	-44.6[3]	-34.1[2]	-33.1[3]		-32.7[1]	-41.3[3]
	DROWNING	-48.3[1]	-52.9[2]	-51.6[3]		-46.6[2]	-46.8[2]		-47.7[1]	
	FIREARMS	-40.1[3]								
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	-73.2[3]								
AGES 15 - 19	UNINT. NON-MOTOR-VEHICLE INJURIES	-41.4[1]	-39.2[1]	-36.8[1]	-48.1[2]	-46.1[1]	-45.1[1]		-39.5[1]	-47.8[1]
	DROWNING	-47.4[1]	-50.8[1]	-47.2[1]	-75.6[3]	-43.2[1]	-41.3[2]		-44.6[1]	-68.3[3]
	FIRES	-48.7[3]	-53.6[3]	-60.5[3]					-51.5[3]	
	FALLS								-55.3[3]	
UNDER AGE 20	UNINT. NON-MOTOR-VEHICLE INJURIES	-34.7[1]	-35.8[1]	-33.5[1]	-40.8[1]	-33.9[1]	-34.6[1]	-31.2[2]	-33.7[1]	-36.3[1]
	DROWNING	-39.7[1]	-37.0[1]	-41.4[1]		-43.4[1]	-44.1[1]		-42.4[1]	
	FIRES	-18.2[3]				-23.0[3]		-36.2[3]		-26.6[3]
	FIREARMS	-44.4[1]	-46.0[1]	-40.7[2]	-75.0[3]				-39.9[1]	-65.0[2]
	POISONING BY SOLID/LIQ. SUBSTANCE	-45.6[2]	-50.5[2]	-51.7[3]					-46.5[2]	
	INHALAT'N/INGEST'N CAUSING OBSTRUC.	-44.9[1]		-79.1[1]	-60.7[3]				-48.3[2]	-40.3[3]

[1]Statistically significant at $p < 0.001$.
[2]Statistically significant at $p < 0.01$.
[3]Statistically significant at $p < 0.05$.

TABLE 11
DEATH RATES FOR LEADING CAUSES OF DEATH BY AGE AND RACE
UNITED STATES RESIDENTS UNDER AGE 20, 1983-86

AGE GROUP	CAUSE OF DEATH	TOTAL	RACE	
			WHITES	NONWHITES
UNDER 1 YR	UNINTENTIONAL INJURIES	24.3	20.6	40.1
	MOTOR-VEHICLE	4.8	4.5	6.2
	OTHER	19.5	16.1	33.9
	PERINATAL CONDITIONS	507.5	409.3	934.2
	CONGENITAL ANOMALIES	230.2	227.0	244.3
	SIDS	142.8	122.0	233.3
	HEART DISEASE*	25.7	22.0	41.5
	CANCER	3.1	3.0	3.4
	PNEUMONIA/INFLUENZA	19.1	14.7	38.0
	HOMICIDE	6.1	4.3	14.1
	SUICIDE	0.0	0.0	0.0
	ALL CAUSES	1074.8	916.8	1761.4
AGES 1 - 4	UNINTENTIONAL INJURIES	20.5	18.8	27.7
	MOTOR-VEHICLE	7.1	6.7	8.8
	OTHER	13.4	12.1	18.8
	PERINATAL CONDITIONS	0.9	0.8	1.7
	CONGENITAL ANOMALIES	6.3	6.2	6.8
	HEART DISEASE*	2.4	2.0	4.2
	CANCER	4.1	4.2	3.5
	PNEUMONIA/INFLUENZA	1.5	1.3	2.6
	HOMICIDE	2.4	1.7	5.8
	SUICIDE	0.0	0.0	0.0
	ALL CAUSES	52.8	47.6	75.1
AGES 5 - 9	UNINTENTIONAL INJURIES	11.8	10.6	16.9
	MOTOR-VEHICLE	6.3	5.9	7.8
	OTHER	5.6	4.7	9.1
	PERINATAL CONDITIONS	0.1	0.1	0.1
	CONGENITAL ANOMALIES	1.5	1.4	1.9
	HEART DISEASE*	0.9	0.8	1.2
	CANCER	3.7	3.8	3.3
	PNEUMONIA/INFLUENZA	0.5	0.4	0.6
	HOMICIDE	0.9	0.6	2.1
	SUICIDE	0.0	0.0	0.0
	ALL CAUSES	25.0	23.0	33.2
AGES 10 - 14	UNINTENTIONAL INJURIES	13.2	13.0	13.9
	MOTOR-VEHICLE	7.2	7.6	5.5
	OTHER	6.0	5.4	8.4
	PERINATAL CONDITIONS	0.0	0.0	0.0
	CONGENITAL ANOMALIES	1.2	1.2	1.2
	HEART DISEASE*	1.0	0.9	1.5
	CANCER	3.5	3.5	3.4
	PNEUMONIA/INFLUENZA	0.4	0.4	0.3
	HOMICIDE	1.4	1.1	2.7
	SUICIDE	1.4	1.5	1.0
	ALL CAUSES	27.9	27.0	32.0
AGES 15 - 19	UNINTENTIONAL INJURIES	45.5	49.5	27.2
	MOTOR-VEHICLE	34.8	38.8	16.5
	OTHER	10.7	10.7	10.7
	PERINATAL CONDITIONS	0.0	0.0	0.0
	CONGENITAL ANOMALIES	1.3	1.3	1.5
	HEART DISEASE*	2.1	1.8	3.5
	CANCER	4.8	4.9	4.1
	PNEUMONIA/INFLUENZA	0.6	0.5	0.7
	HOMICIDE	8.9	5.4	24.5
	SUICIDE	9.5	10.3	5.4
	ALL CAUSES	82.7	83.1	81.0
AGES 1 - 19	UNINTENTIONAL INJURIES	23.5	24.0	21.2
	MOTOR-VEHICLE	14.7	15.8	9.8
	OTHER	8.8	8.2	11.4
	PERINATAL CONDITIONS	0.2	0.2	0.4
	CONGENITAL ANOMALIES	2.4	2.4	2.7
	HEART DISEASE*	1.6	1.4	2.6
	CANCER	4.0	4.1	3.6
	PNEUMONIA/INFLUENZA	0.7	0.6	1.0
	HOMICIDE	3.6	2.3	9.1
	SUICIDE	3.0	3.3	1.7
	ALL CAUSES	47.8	46.2	54.8

*Heart disease rates were computed differently than rates for the other causes. See Methods, page 2.

TABLE 12
STATISTICALLY SIGNIFICANT PERCENT DIFFERENCES BETWEEN 1983-87 NORTH CAROLINA AND 1983-86 UNITED STATES DEATH RATES FOR LEADING CAUSES OF DEATH BY AGE AND RACE, RESIDENTS UNDER AGE 20

AGE GROUP	CAUSE OF DEATH	TOTAL	RACE	
			WHITES	NONWHITES
UNDER 1 YR	PERINATAL CONDITIONS	21.8[1]	10.2[3]	
	CONGENITAL ANOMALIES	6.7[3]		
	SIDS	11.0[2]		
	UNINTENTIONAL INJURIES	21.9[3]		
	MOTOR-VEHICLE	59.4[2]		85.8[3]
	PNEUMONIA/INFLUENZA		-41.9[2]	
	ALL CAUSES	14.2[1]	6.6[3]	
AGES 1 - 4	UNINTENTIONAL INJURIES	15.1[2]		21.8[3]
	MOTOR-VEHICLE	29.6[2]	23.6[3]	
	CANCER	-30.5[3]	-32.8[3]	
AGES 5 - 9	UNINTENTIONAL INJURIES	18.7[2]		
	MOTOR-VEHICLE	31.5[1]	26.7[3]	
AGES 10 - 14	UNINTENTIONAL INJURIES	30.8[1]	28.2[1]	33.3[2]
	MOTOR-VEHICLE	40.6[1]	44.8[1]	48.6[2]
	OTHER	18.8[3]		
	CANCER	-29.2[2]		-46.5[3]
	SUICIDE			-86.0[3]
AGES 15 - 19	UNINTENTIONAL INJURIES	15.8[1]	20.4[1]	29.9[1]
	MOTOR-VEHICLE	16.9[1]	23.0[1]	38.9[1]
	OTHER	12.5[3]		
	SUICIDE			-34.4[3]
	HOMICIDE	-31.9[1]	-32.8[1]	-50.8[1]
	CANCER	-18.0[3]		
	ALL CAUSES		7.6[2]	-9.3[3]
AGES 1 - 19	UNINTENTIONAL INJURIES	19.6[1]	20.4[1]	23.4[1]
	MOTOR-VEHICLE	25.9[1]	30.8[1]	36.6[1]
	OTHER	9.0[3]		12.2[3]
	CANCER	-23.0[1]	-20.3[2]	-25.9[3]
	HOMICIDE	-22.9[1]	-28.2[1]	-41.4[1]
	SUICIDE			-40.5[2]
	ALL CAUSES	5.4[1]	6.3[2]	

[1]Statistically significant at $p < 0.001$.
[2]Statistically significant at $p < 0.01$.
[3]Statistically significant at $p < 0.05$.

TABLE 13
DEATH RATES FOR SELECTED UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES BY AGE AND RACE
UNITED STATES RESIDENTS UNDER AGE 20, 1983-86

AGE GROUP	CAUSE OF DEATH	TOTAL	RACE	
			WHITES	NONWHITES
UNDER 1 YR	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	19.5	16.2	33.6
	DROWNING	2.3	2.2	2.8
	FIRES	3.2	2.2	7.9
	FIREARMS	0.1	0.0	0.2
	ACCIDENTAL MECHANICAL SUFFOCATION	4.8	4.3	7.1
	POISONING BY SOLID/LIQUID SUBSTANCES	0.6	0.5	0.9
	FALLS	1.1	0.8	2.1
	INHALATION/INGESTION CAUSING OBSTRUCTION	4.5	3.7	7.9
AGES 1 - 4	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	13.4	12.1	18.9
	DROWNING	4.3	4.6	2.9
	FIRES	4.4	3.2	9.7
	FIREARMS	0.3	0.2	0.4
	POISONING BY SOLID/LIQUID SUBSTANCES	0.5	0.4	0.9
	FALLS	0.6	0.5	1.1
	INHALATION/INGESTION CAUSING OBSTRUCTION	0.8	0.8	1.5
AGES 5 - 9	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	5.6	4.8	9.1
	DROWNING	1.7	1.3	3.1
	FIRES	1.8	1.2	3.9
	FIREARMS	0.3	0.3	0.4
	POISONING BY SOLID/LIQUID SUBSTANCES	0.1	0.1	0.1
	FALLS	0.2	0.1	0.2
	INHALATION/INGESTION CAUSING OBSTRUCTION	0.1	0.1	0.3
AGES 10 - 14	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	6.0	5.4	8.3
	DROWNING	1.7	1.2	4.1
	FIRES	0.9	0.7	1.6
	FIREARMS	1.0	1.1	0.6
	FALLS	0.2	0.2	0.2
	INHALATION/INGESTION CAUSING OBSTRUCTION	0.2	0.1	0.3
AGES 15 - 19	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	10.7	10.7	10.7
	DROWNING	3.2	2.8	4.8
	FIRES	0.8	0.7	1.2
	FIREARMS	1.3	1.3	1.3
	POISONING BY SOLID/LIQUID SUBSTANCES	1.0	1.1	0.7
	FALLS	0.8	0.8	0.4
	INHALATION/INGESTION CAUSING OBSTRUCTION	0.2	0.2	0.3
UNDER AGE 20	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	9.3	8.6	12.6
	DROWNING	2.6	2.4	3.8
	FIRES	1.9	1.4	4.0
	FIREARMS	0.7	0.7	0.7
	POISONING BY SOLID/LIQUID SUBSTANCES	0.5	0.5	0.5
	FALLS	0.5	0.5	0.5
	INHALATION/INGESTION CAUSING OBSTRUCTION	0.5	0.4	0.9

TABLE 14
STATISTICALLY SIGNIFICANT PERCENT DIFFERENCES BETWEEN 1983-87 NORTH CAROLINA AND 1983-86 UNITED STATES DEATH RATES FOR SELECTED UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES BY AGE AND RACE, RESIDENTS UNDER AGE 20

AGE GROUP	CAUSE OF DEATH	TOTAL	RACE	
			WHITES	NONWHITES
UNDER 1 YR	FIREARMS		1218.6[2]*	
AGES 1 - 4	FIRES	34.7[1]		29.5[2]
AGES 10 - 14	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	18.1[2]		
	DROWNING	42.1[1]		
AGES 15 - 19	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	12.6[2]		
	DROWNING	36.9[1]		55.9[1]
UNDER AGE 20	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	8.9[2]		11.3[2]
	FALLS			87.9[1]
	INHALATION/INGESTION CAUSING OBSTRUCTION		-41.1[2]	51.2[2]

*The North Carolina rate is based on only one death.
[1]Statistically significant at $p < 0.01$.
[2]Statistically significant at $p < 0.05$.

TABLE 15
STATISTICALLY SIGNIFICANT RACE AND SEX DEATH RATE RATIOS FOR LEADING CAUSES OF DEATH NORTH CAROLINA RESIDENTS UNDER AGE 20, 1983-87

AGE GROUP	CAUSE OF DEATH	NONWHITES TO WHITES	MALES TO FEMALES	NONWHITE MALES TO WHITE MALES	NONWHITE FEMALES TO WHITE FEMALES
UNDER 1 YR	PERINATAL CONDITIONS	2.2	1.2	2.2	2.2
	CONGENITAL ANOMALIES		1.1*		
	SIDS	1.8	1.4	1.7	2.0
	UNINTENTIONAL INJURIES	2.3		2.2	2.4
	MOTOR-VEHICLE	1.9[1]			
	OTHER	2.4		2.3	2.8
	PNEUMONIA AND INFLUENZA	4.1		4.5	3.7
	HOMICIDE	2.3*			3.7*
	HEART DISEASE	2.0			3.0
	ALL CAUSES	1.8	1.2	1.8	1.8
AGES 1 - 4	UNINTENTIONAL INJURIES	2.7	1.4	1.6	2.0
	MOTOR-VEHICLE	1.4[2]	1.4*		
	OTHER	2.0	1.5	1.7	2.7
	PENUMONIA AND INFLUENZA	3.2	2.7*	4.1	
	HOMICIDE	3.8		4.1	3.4*
	ALL CAUSES	1.7	1.4	1.7	1.6
AGES 5 - 9	UNINTENTIONAL INJURIES	1.8	2.3	1.8	
	MOTOR-VEHICLE	1.3[3]	2.2	1.5*	
	OTHER	2.2	2.5	2.2	2.3*
	HOMICIDE	4.4		9.1	2.9*
	ALL CAUSES	1.8	1.5	1.7	1.3
AGES 10 - 14	UNINTENTIONAL INJURIES		2.8		
	MOTOR-VEHICLE	0.7*	2.3		
	OTHER	1.8	4.0	1.9	
	HOMICIDE	2.3*			
	SUICIDE	0.1*	2.8*	0.1*	
	ALL CAUSES		1.9		
AGES 15 - 19	CONGENITAL ANOMALIES	2.1*			
	UNINTENTIONAL INJURIES	0.6	2.9	0.7	0.5
	MOTOR-VEHICLE	0.5	2.5	0.5	0.4
	OTHER		6.2		
	HOMICIDE	3.3	2.4	3.5	3.0
	HEART DISEASE	2.1	1.8*	2.1*	
	SUICIDE	0.3	4.8	0.4	0.1
	ALL CAUSES	0.8	2.6	0.9	0.8
AGES 1 - 19	CONGENITAL ANOMALIES	1.4*	1.3*		
	UNINTENTIONAL INJURIES	0.9*	2.5		
	MOTOR-VEHICLE	0.8	2.3	0.7	0.6
	OTHER	1.8	3.0	1.5	2.0
	PNEUMONIA AND INFLUENZA	2.5	1.7*	3.5	
	HOMICIDE	3.2	1.7	3.4	2.9
	CANCER				0.6*
	HEART DISEASE	1.7		1.6*	1.9*
	SUICIDE	0.3	4.4	0.3	0.1
	ALL CAUSES	1.1	2.0	1.1*	

*Asterisked entries are statistically significant at $p < 0.05$. All others are significant at $p < 0.01$, except as noted in the following footnotes.

[1]Statistically significant at $p < 0.0524$.

[2]Statistically significant at $p < 0.0614$.

[3]Statistically significant at $p < 0.0658$.

TABLE 16
STATISTICALLY SIGNIFICANT RACE AND SEX DEATH RATE RATIOS FOR SELECTED UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES NORTH CAROLINA RESIDENTS UNDER AGE 20, 1983-87

AGE GROUP	CAUSE OF DEATH	NONWHITES TO WHITES	MALES TO FEMALES	NONWHITE MALES TO WHITE MALES	NONWHITE FEMALES TO WHITE FEMALES
UNDER 1 YR	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	2.4		2.3	2.6
	ACCIDENTAL MECHANICAL SUFFOCATION	2.2*			
	INHALATION/INGESTION CAUSING OBSTRUCTION	4.4		7.4	
AGES 1 - 4	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	2.0	1.5	1.7	2.7
	FIRES	4.0		2.9	6.0
	FALLS	11.7*			
	INHALATION/INGESTION CAUSING OBSTRUCTION	6.1		6.4	5.7*
AGES 5 - 9	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	2.2	2.5	6.0	2.3*
	DROWNING		2.7*	4.5	
	FIRES	3.1*	2.2	6.2	
AGES 10 - 14	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	1.8	4.0	1.9	
	DROWNING	4.2	6.0	4.8	
	FIRES	3.2		10.6	
	FIREARMS		12.7	0.3[1]	
AGES 15 - 19	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES		6.2		
	DROWNING	2.5	17.0	2.6	
	FIREARMS		17.0		
UNDER AGE 20	UNINTENTIONAL NON-MOTOR-VEHICLE INJURIES	1.7	2.7	1.5	2.1
	DROWNING	1.9	4.3	2.2	
	FIRES	3.2		3.1	3.3
	FIREARMS		8.3		
	ACCIDENTAL MECHANICAL SUFFOCATION		3.7		
	POISONING BY SOLID/LIQUID SUBSTANCES		2.2*		
	FALLS	3.1		3.0	3.4
	INHALATION/INGESTION CAUSING OBSTRUCTION	5.6		9.2	3.4

*Asterisked entries are statistically significant at $p < 0.05$. All others are significant at $p < 0.01$, except as noted in the following footnote.
[1]Statistically significant at $p < 0.0536$.

TABLE 17
AFDC AND NON-AFDC DEATHS BY AGE, RACE, AND SEX NORTH CAROLINA RESIDENTS AGES 28 DAYS TO 17 YEARS JULY 1, 1985 TO DECEMBER 31, 1988

		AFDC			NON-AFDC		
AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	TOTAL WHITES	TOTAL NONWHITES	TOTAL RESIDENTS	TOTAL WHITES	TOTAL NONWHITES
28 DAYS - 1 YEAR	ALL CAUSES	261	80	181	1037	620	417
AGES 1 - 4	ALL CAUSES	134	32	102	579	373	206
AGES 5 - 9	ALL CAUSES	55	15	40	379	232	147
AGES 10 - 14	ALL CAUSES	39	13	26	411	281	130
AGES 15 - 17	ALL CAUSES	27	12	15	757	587	170
AGES 28 DAYS - 17 YEARS	CONGENITAL ANOMALIES	49	22	27	235	168	67
	UNINTENTIONAL INJURIES	129	35	94	1051	748	303
	MOTOR-VEHICLE	54	17	37	643	501	142
	DROWNING	18	3	13	116	78	38
	FIRES	35	7	28	94	45	49
	PNEUMONIA/INFLUENZA	14	5	9	54	19	35
	HOMICIDE	20	3	17	70	30	40
	CANCER	17	9	8	156	122	34
	HEART DISEASE	19	2	17	88	54	34
	ALL CAUSES	518	152	364	3163	2093	1070

TABLE 18
AFDC AND NON-AFDC DEATH RATES BY AGE AND RACE
NORTH CAROLINA RESIDENTS AGES 28 DAYS TO 17 YEARS
JULY 1, 1985 TO DECEMBER 31, 1988

		AFDC			NON-AFDC		
AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	TOTAL WHITES	TOTAL NONWHITES	TOTAL RESIDENTS	TOTAL WHITES	TOTAL NONWHITES
28 DAYS - 1 YEAR	ALL CAUSES	620.28	643.29	610.62	383.85	300.08	656.23
AGES 1 - 4	ALL CAUSES	152.15	112.93	170.76	53.28	46.88	70.76
AGES 5 - 9	ALL CAUSES	67.81	58.69	72.01	268.45	23.10	36.09
AGES 10 - 14	ALL CAUSES	61.19	88.06	58.25	26.63	25.68	28.92
AGES 15 - 17	ALL CAUSES	61.65	94.19	48.30	75.36	60.21	62.35
AGES 28 DAYS - 17 YEARS	CONGENITAL ANOMALIES	15.37	22.41	12.24	4.42	4.38	4.51
	UNINTENTIONAL INJURIES	40.47	35.65	42.61	19.77	19.52	20.41
	MOTOR-VEHICLE	16.94	17.32	16.77	12.09	13.07	9.57
	DROWNING	5.02	3.06	5.89	2.18	2.04	2.56
	FIRES	10.98	7.13	12.69	1.77	1.17	3.30
	PNEUMONIA/INFLUENZA	4.39	5.09	4.08	1.02	0.50	2.36
	HOMICIDE	6.27	3.06	7.71	1.32	0.78	2.69
	CANCER	5.33	9.17	3.63	2.93	3.18	2.29
	HEART DISEASE	5.96	2.04	7.71	1.66	1.41	2.29
	ALL CAUSES	161.86	154.83	164.99	59.49	54.81	72.09

TABLE 19
RATIOS OF AFDC TO NON-AFDC DEATH RATES
BY AGE AND RACE
NORTH CAROLINA RESIDENTS AGES 28 DAYS TO 17 YEARS
JULY 1, 1985 TO DECEMBER 31, 1988

AGE GROUP	CAUSE OF DEATH	TOTAL RESIDENTS	TOTAL WHITES	TOTAL NONWHITES
28 DAYS - 1 YEAR	ALL CAUSES	1.62[1]	2.14[1]	0.93[3]
AGES 1 - 4	ALL CAUSES	2.86[1]	2.41[1]	2.41[1]
AGES 5 - 9	ALL CAUSES	2.53[1]	2.54[1]	2.00[1]
AGES 10 - 14	ALL CAUSES	2.30[1]	2.65[1]	2.01[1]
AGES 15 - 17	ALL CAUSES	0.82[3]	1.17[3]	0.77[3]
AGES 28 DAYS - 17 YEARS	CONGENITAL ANOMALIES	3.48[1]	5.11[1]	2.71[1]
	UNINTENTIONAL INJURIES	2.05[1]	1.83[1]	2.09[1]
	MOTOR-VEHICLE	1.40[2]	1.32[3]	1.75[1]
	DROWNING	2.30[1]	1.50[3]	2.30[1]
	FIRES	6.21[1]	6.07[1]	3.84[1]
	PNEUMONIA/INFLUENZA	4.32[1]	10.27[1]	1.73[3]
	HOMICIDE	4.77[1]	3.90[2]	2.86[1]
	CANCER	1.82[2]	2.88[1]	1.58[3]
	HEART DISEASE	3.60[1]	1.45[3]	3.36[1]
	ALL CAUSES	2.72[1]	2.84[3]	2.29[1]

[1]Statistically significant at $p < 0.01$.
[2]Statistically significant at $p < 0.05$.
[3]Not statistically significant.

TABLE 20
RATIOS OF AFDC NONWHITE TO AFDC WHITE DEATH RATES BY AGE ~~AND RACE~~
NORTH CAROLINA RESIDENTS AGES 28 DAYS TO 17 YEARS
JULY 1, 1985 TO DECEMBER 31, 1988

AGE GROUP	CAUSE OF DEATH	NONWHITE TO WHITE
28 DAYS - 1 YEAR	ALL CAUSES	0.95[2]
AGES 1 - 4	ALL CAUSES	1.51[1]
AGES 5 - 9	ALL CAUSES	1.23[2]
AGES 10 - 14	ALL CAUSES	0.86[2]
AGES 15 - 17	ALL CAUSES	0.51[2]
AGES 28 DAYS - 17 YEARS	UNINTENTIONAL INJURIES	1.20[2]
	MOTOR-VEHICLE	0.97[2]
	CANCER	0.40[2]
	ALL CAUSES	1.07[2]

[1]Statistically significant at $p < 0.05$.
[2]Not statistically significant.

APPENDIX I

International Classification of Disease Codes

Cause of Death	Eighth Revision	Ninth Revision
Cancer	140-209	140-208
Heart Disease	390-398,402,404,410-429	390-398,402,404-429
Pneumonia and Influenza	480-486,470-474	480-487
Congenital Anomalies	740-759	740-759
Perinatal Conditions	760-779	760-779
Sudden Infant Death Syndrome (SIDS)	795.0	798.0
Unintentional Motor-vehicle Injuries	810-823	810-825
Unintentional Non-motor-vehicle Injuries	800-807,825-949	800-807,826-949
Poisoning by Solid or Liquid Substance	850-869	850-869
Falls	800-887	800-888
Fires	890-899	890-899
Inhalation or Ingestion Causing Obstruction (IICO)	911-912	911-912
Accidental Mechanical Suffocation	913	913
Firearms	922	922
Suicide	950-959	950-959
Homicide	960-978	960-978

APPENDIX II

Formulas for the Determination of Significance Levels

The Ratio of Two Rates

For a given age/race/sex group and cause group, let

r_1 = the proportion in age/race/sex group 1 who die, for that cause

where $r_1 = \frac{d_1}{n_1}$ or deaths divided by population, and

r_2 = the proportion in age/race/sex group 2 who die for that cause

where $r_2 = \frac{d_2}{n_2}$.

Then the ratio of the rates (or proportions) is

$$\hat{\Theta} = \frac{r_1}{r_2}.$$

To assist large sample normality of this estimator, we take natural logarithms:

$$\ln \hat{\Theta} = \ln r_1 - \ln r_2$$

which has a variance

$$V(\ln \hat{\Theta}) = V(\ln r_1) + V(\ln r_2).$$

This variance may be estimated using a linearized Taylor series approach so that

$$V(\ln \hat{\Theta}) \doteq \left(\frac{1}{r_1}\right)^2 V(r_1) + \left(\frac{1}{r_2}\right)^2 V(r_2)$$

where $V(r_1) = \frac{r_1}{n_1}$

and $V(r_2) = \frac{r_2}{n_2}$,

following the Poisson distribution.

A Z-score for significance of the ratio is computed:

$$Z = \frac{\ln r_1 - \ln r_2}{\sqrt{V(\ln \hat{\Theta})}}$$

where $\ln \hat{\Theta} - \ln 1 = \ln \hat{\Theta} - 0 = \ln r_1 - \ln r_2$

with $V(\ln \hat{\Theta}_i)$ calculated as above.

If the absolute value of the Z-score is greater than 1.96, then either the rate ratio is considered significantly higher or lower than one, or the difference between the two rates is considered significantly different from zero at $p < 0.05$; if the absolute value of the Z-score is greater than 2.57, then either the rate ratio or difference is significantly higher or lower than one or significantly different from zero, respectively, at $p < 0.01$; and, if the absolute value of the Z-score is greater than 3.3, then the rate ratio or difference is significantly higher or lower than one or significantly different from zero, respectively, at $p < 0.001$.

APPENDIX III

AFDC Childhood Eligibility Requirements

A child must:

A. Be age 17 or younger; or

B. Be age 18 and a full-time student who is reasonably expected to complete high school (or a vocational or technical training program that is equivalent to high school) before reaching age 19. When a child who is a minor parent turns age 18, he is no longer considered a child. If he wishes to continue receiving assistance, he must apply for his own assistance unit. Delete the 18 year old minor parent and his child, if appropriate, effective the first month after his or her eighteenth birthday.

C. Be deprived of parental support or care because:

1. Of the death, continued absence from the home, or physical or mental incapacity of a parent, or
2. The parent who is the principal wage earner is unemployed. Both parents must be legally married to each other.

D. Be living with a specified relative.

E. Live in North Carolina voluntarily with the intent to remain. This includes anyone entering North Carolina in search of work or because of a job commitment. A child has the residence of the person with whom he or she resides.

F. Be a citizen of the United States, an alien lawfully admitted for permanent residence, or an alien permanently residing in the United States under color of law (PRUCOL).

G. Not be an inmate of a public institution.

H. Not receive SSI or public assistance from the same county, another county, or another state. This does not include Low Income Energy Assistance Payments, Crisis Intervention Payments, AFDC-Emergency Assistance Payments, or food stamps.

I. Meet the state's AFDC income and need standards outlined below.

J. Meet the reserve requirements.

K. Unless exempt, register for work and satisfactorily participate.

L. Furnish (all) his or her social security number(s) that he or she has used or apply for a number.

Figure I

MONTHLY NEED STANDARD BY NUMBER IN THE BUDGET/ASSISTANCE UNIT							
Number in Budget/Assistance Unit	1	2	3	4	5	6	7
Need Standard	$354	$462	$532	$582	$634	$684	$730
Number in Budget/Assistance Unit	8	9	10	11	12	13	14
Need Standard	$764	$796	$842	$878	$926	$972	$1,020
For ***each person*** in the budget/assistance unit in excess of 14, add $48 to the Need Standard for 14.							

Figure II

INDIVIDUAL NEED STANDARD FOR NUMBER IN THE BUDGET/ASSISTANCE UNIT										
No. in Budget/Assistance Unit	1	2	3	4	5	6	7	8	9	10
Individual's Need	$354	$231	$177	$146	$127	$114	$104	$96	$88	$84
If there are more than 10 individuals, determine the individual's needs by dividing the Need Standard by the total number of people in the budget/assistance unit and round to the nearest dollar.										

APPENDIX IV

AFDC AND NON-AFDC POPULATIONS
July 1, 1985 - December 31, 1988

	AFDC			NON-AFDC		
	Total	White	Nonwhite	Total	White	Nonwhite
Under 1 yr.	42,078	12,436	29,642	270,157	206,612	63,545
Ages 1-4	88,070	28,337	59,733	1,086,794	795,679	291,115
Ages 5-9	81,111	25,560	55,551	1,411,831	1,004,468	407,363
Ages 10-14	63,734	19,102	44,632	1,543,643	1,094,054	449,589
Ages 15-17	43,799	12,740	31,059	1,004,523	731,853	272,670

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